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Arnaldo BORDONI

Lathrobium pivai sp. n. from the Altopiano di Asiago (Veneto, Vicenza) and new records for *L. freyi* Koch, 1938 and *L. pacei* Piva, 1995 (Coleoptera, Staphylinidae, Paederinae)

313° contribution to the knowledge of the Staphylinidae

Riassunto: Lathrobium pivai *sp. n. dell'Altopiano di Asiago (Veneto, Vicenza) e nuovi dati per* L. freyi *Koch, 1938 e* L. pacei *Piva, 1995 (Coleoptera, Staphylinidae, Paederinae).*

Lathrobium pivai sp. n., specie anoftalma, attera e depigmentata del Veneto (Altopiano di Asiago), viene descritta ed illustrata. Nuovi dati geonemici sono elencati per *Lathrobium freyi* Koch, 1938 e *Lathrobium pacei* Piva, 1995.

Abstract: *Lathrobium pivai* sp. n., anophthalmous, apterous and depigmented species from Veneto (Altopiano di Asiago), is described and illustrated. Some new records are listed for *Lathrobium freyi* Koch, 1938 and *Lathrobium pacei* Piva, 1995.

Key words: Coleoptera, Staphylinidae, Paederinae, *Lathrobium*, new species, new records, Italy.

INTRODUCTION

As a preamble to the following discussion, I think it is useful to present my opinion on the genus *Lathrobium* Gravenhorts, 1802 and the subgenus *Glyptomerus* Müller, 1856. Based on Schülke & Smetana's Catalog of Palaearctic Coleoptera (2015), the species described in these pages should be included in the subgenus *Glyptomerus* which contains depigmented, apterous, anophthalmous or sub-anophthalmous *Lathrobium*. In the past however (Bordoni, 1984) and still recently (Bordoni, 2018) I had considered it appropriate to refute this interpretation, reaffirming the synonymy between *Lathrobium* and *Glyptomerus*. Coiffait, after writing that this subgenus had no reason to exist (1972), later (1982) reproposed it based on some characters (ventral lamina and dorsal lamina of aedeagus always without denticulations, except from sometimes at the apex; ventral lamina always divided in two at the apex; surface of the sixth sternite visible with setae combs) which are not constant in the species in question, nor exclusive of them, since they are also observed in *Lathrobium* s. str. Ventral and dorsal laminae with denticulation are present also, for example, in *L. elongatum* (Linnaeus, 1767) and *L. dilutum* Erichson, 1839; ventral lamina divided in two at the apex occur for example in *L. brunnipes* (Fabricius, 1792); sixth apparent sternite provided with setae combs occur also in *L. furcatum* Czwalina, 1888 or in *L. elongatum*.

In my opinion, therefore, the presence or absence of the above characters does not constitute sufficient reason to create or maintain a subgenus. What remains to distinguish the species in question whose aedeagus has the same structure as the other *Lathrobium*. Depigmentation, eyes reduced to a whitish cicatric or a few presumably non-functional ommatidia, wingless, characters that are common to other *Lathrobium*. In essence, a characteristic aspect for which as early as 1984 (l. c.) I have indicated these species with the word gliptomeroides.

In support of this opinion, I propose a couple of examples. Years ago (Bordoni, 1987) I described *Atrechus casalei* (sub *Baptolinus*), anophthalmous, subaptherous and depigmented species that has not been included in a separate subgenus compared to congeners that have large eyes and dark livery. On another occasion (Bordoni, 1973) I described *Lesteva sbordonii*, also depigmented, sub-anophthalmous and with very small

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wings, very different from the dark brown congeners with large protruding eyes. In this case I have also described a new subgenus (*Lestevina*) due to the constant presence in *L. sbordonii* and in some species of real diagnostic characters: fully carinate pronotum margin, pronotum with a deep lateral fossa, constantly more marked punctuation. In conclusion, since the important characters are present / absent in both *Lathrobium* and *Glyptomerus*, I believe that the name subgenus can and should be used only in the presence of very significant and peculiar characters.

The anophthalmous or sub-anophthalmous, depigmented and apterous *Lathrobium* from the Italian oriental Alps are the following: *L. alzonai* Capra & Binaghi, 1938 (Colli Berici); *L. baldense* Pace, 1975 (Mt Baldo; Lessini Mts); *L. cavicola* Müller, 1856 (Istria, Venezia Giulia; the only species not endemic of Italy, because occurs also in Austria, Croatia and Slovenia); *L. freyi* Koch, 1938 (Cansiglio, Venetiane Alps); *L. pacei* Piva, 1995 (Lessini Mts), *L. pinkeri* Ganglbauer, 1901 (Mts Lessini, Massiccio del Pasubio) and *L. settei* Pace & Zanetti, 1983 (Parco della Musella-Verona).

The collection of a new species of *Lathrobium* on the Asiago plateau (Altopiano dei Sette Comuni) in the province of Vicenza, where no other species belonging to this group has ever been collected, is of particular interest. My colleague Erminio Piva generously gave me the opportunity to describe this taxon and provided me with a large amount of data that I tried to summarize in these pages, related to some *Lathrobium* species of Northern Italy.

I also derived a great deal of information from his excellent contribution (Piva, 1995) in which he described *L. pacei* and provided morphological and geonemic data of other anophthalmous or sub-anophthalmous, apterous and depigmented *Lathrobium*.

Lathrobium pivai sp. n.

EXAMINED MATERIAL. Holotype ♂: Veneto, Altopiano di Asiago (Altopiano dei Sette Comuni, Vicenza), Mount Barco, 1100 m, Mondin leg. 6.VI.1996 (coll. Piva); paratype: same data, Cogollo del Cengio (Vicenza), Mount Barco, 1250 m, sud-ovest slopes, E. Piva leg. 13.VII.2018, 1 ♂ (coll. Bordoni).

DESCRIPTION. Length of body about 8.8 mm; from anterior margin of head to posterior margin of elytra: 4.36 mm. Body (Fig. 1) uniformly yellow red. Head length 1.22 mm from the antennal tubercles to the posterior margin of the head, width 1.18 mm, at the point of its maximum width behind the middle of it, with rounded sides and widely rounded posterior angles. Eyes depigmented, reduced to a very small sub-circular area with an axis of 0.074 mm. Antennae 2.4 mm long, thickly pubescent.

Surface of head with polygonal, very fine micro-reticulation, and transverse micro-striation on the lateral margins. Punctation fine, circular and dense, often with thin yellow setae, except from a narrow, median stripe, without punctures. The distance between the punctures more or less similar to their diameter. Pronotum length 1.48 mm, width 1.03 mm at the point of its

Fig. 1. *Lathrobium pivai* sp. n.: body (total length 8.8 mm) (photo S. Cuoco).

maximum width near the anterior angles, sub-rectangular, with barely oblique anterior margins and sub-rectilinear sides, longer and narrower than head. Surface shiny, without micro-sculpture, with numerous punctures, except from a median stripe, similar to those of the head, often with yellow setae, arranged in some irregular series, absent on the lateral margins. Elytra short, shorter and narrower than pronotum, slightly dilated posteriad, with almost obsolete humeral angles. Surface wrinkled, without micro-sculpture, with rounded, irregular and superficial punctures with yellow setae, sparser on the lateral margins. Abdomen with transverse micro-striation and very fine punctation, arranged in numerous closed series on each segment. In ventral view the setae on the fourth and fifth sternite visible converge towards the median axis. These sternites have a weak median depression. Sixth sternite visible with three superimposed series on each half, composed of short blackish setae.

Aedeagus (Figs 2-6) 1.85 mm long; dorsal lamina in lateral view (Fig. 3) thick and wider in the distal portion than in the proximal portion; ventral lamina, in lateral view gradually narrower towards the acute apex (Fig. 4); in ventral view the ventral lamina has an elongated ovoid shape (Fig. 5) with pointed apex and for a long proximal section divided in two; the dorsal lam-

Figs 2-3: *Lathrobium pivai* sp. n.: 2, 3 - aedeagus in lateral and ventral view (total length 1.85 mm) (photo S. Cuoco).

ina (Fig. 6) also has a narrow ovoid shape and the distal apex more acute than the proximal one. The proximal apex posteriorly presents, in lateral view, a short series of minute denticulations, the first of which is more evident than the others.

ETYMOLOGY. The species is dedicated with pleasure to the colleague and friend Erminio Piva who collected the interesting taxon here described, generously giving to me the paratype, and who gave me a lot of information on the depigmented *Lathrobium* of north-eastern Italy.

DISTRIBUTION. The species is known only from the type locality.

REMARKS. The paratype is similar to the holotype in external and aedeagic characters.

The ventral lamina of the new species is similar to that of *Lathrobium baldense* Pace, 1975 from Mt Baldo and Lessini Mts (Veneto), from which it differs in the following characters of aedeaagus: dorsal lamina narrow, ovoid elongate and spindle-shaped in dorsal view; ventral lamina with narrowly rounded apex in lateral view and with non-acute apex in ventral view. The aedeagus of the new species also differs from that of *L. pinkeri* Ganglbauer, 1901 of the Lessini Mts and Massiccio del Pasubio-Novegno. In fact, in *L. pinkeri* the aedeagus is very similar to that of *L. baldense* but it has the apex of the dorsal lamina more dilated in lateral view and wider in the middle-proximal portion in dorsal view and therefore the aedeagus has a different structure also from *L. pivai* sp. n.

In 1975 Pace also described a subspecies of *L. pinkeri* (*pinkeri veronense*) of the Lessini Mts that was considered synonymous with *L. pinkeri* since the indicated characters are considered of little account (Bordoni, 1984).

Lathrobium pivai sp. n. is similar in the appearance to *L. freyi* from which differs by the following characters: body very stronger, broader and a little shorter; head wider, with more rounded sides and sparser punctation; pronotum massive, wider and a little longer, with more marked anterior angles and deeper punctation; elytra wider, with almost obsolete humeral angles and very sparser punctation. From *L. freyi* the new species differs also by the structure of the aedeagus (Figs. 7-8).

Lathrobium freyi Koch, 1938

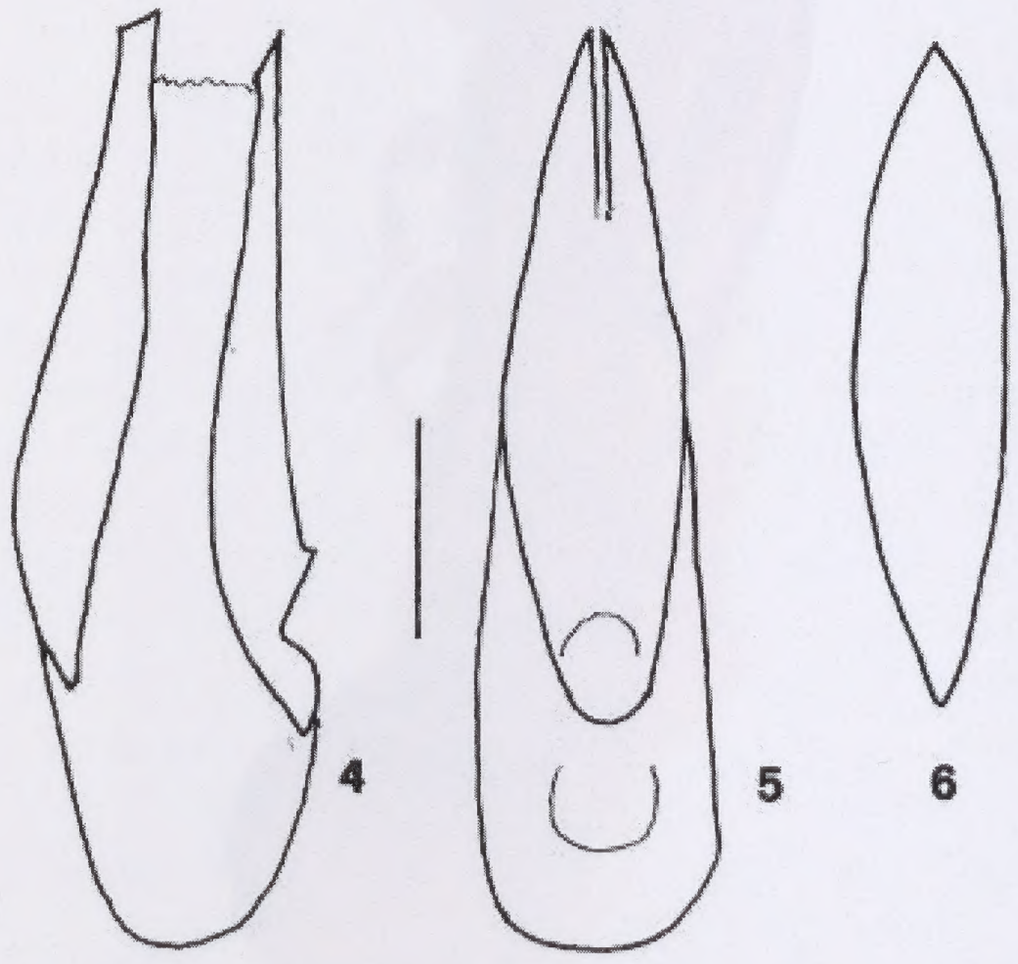
EXAMINED MATERIAL. Veneto, Mt Cesen (Treviso), 900-1000 m, sud slopes, D. Zanon 25.V.1988, 1 ♂, 1 ♀ (coll. Magrini), 1 ♂ (coll. Bordoni); Veneto, Trichiana, Val Brenta (Belluno), 900 m, D. Zanon 18.VI.1987, 2 ♀♀ (coll. Magrini); Trentino, Susà (Pergine Valsugana, Trento), Rio Merdar, D. Zanon 2.VII.1992, 1 ♂ (coll. Bordoni), 1 ♂ (coll. Magrini).

DISTRIBUTION. This species is known from the hydrographic left of the Piave river, in the pre-Alpine belt, from the Bosco del Cansiglio to Mt Cesen and from the hydrographic right of the Piave river in the Feltrine Prealps (Mt Avena) and on massif of Mt Grappa (Piva, 1995). The record of Susà is the first to the right of the Brenta river and is therefore of particular interest.

REMARKS. The species (Figs 7-8) is one of the most widespread in the area both from a numerical and territorial point of view. This probably explains some variability in the structure of the ventral and dorsal laminae of the aedeagus.

Lathrobium pacei Piva, 1995

The species is known from Veneto, Montagna Spaccata, Mts Lessini, Recoaro Terme (Vicenza), 560 m and from Valle del Boia, Valdagno (Vicenza), 465 m, all records located west of the Valle dell'Agno. My friend Piva tells me about stations east of that valley (Valdagno, loc. Grendene, 610 m and SE slopes Mt Scandolara, 745 m, leg. D. Bianco & E. Piva 2017-2018), numerous specimens ♂♂ and ♀♀ (all col-



Figs 4-6: *Lathrobium pivai* sp. n.: 4, 5 - aedeagus in lateral and ventral view; 6 - dorsal lamina in dorsal view (scale bar: 0.5 mm).

Figs 7-8: *Lathrobium freyi* Koch, 1938: 7 - body (total length 9.25); 8 - aedeagus in lateral view (photo S. Cuoco).

lected by washing the soil) index of a thriving population in conjunction with an optimal MSS for their existence, which is a particularly interesting biogeographical datum. In these localities *L. pacei* does not live with *L. pinkeri* which instead is present in the typical locality and in the Valle del Boia (Piva, com. pers.)

ACKNOWLEDGEMENTS

I thank Erminio Piva (Vicenza, Italy), talented entomologist who collected the species described in these pages and who provided me with copious information on the *Lathrobium* of the eastern Italian Alps. Thanks also to Adriano Zanetti for critical re-reading of the text.

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Stefano ZOIA

First citation of *Macrocoma splendens* for La Gomera, Canary Islands (Coleoptera Chrysomelidae Eumolpinae)

Riassunto: *Prima segnalazione di* Macrocoma splendens *per La Gomera, Isole Canarie (Coleoptera Chrysomelidae Eumolpinae).*

Macrocoma splendens Lindberg, 1950 viene segnalata per la prima volta per La Gomera (Isole Canarie) e gli esemplari esaminati sono comparati con quelli provenienti da La Palma e Tenerife. È questa la prima segnalazione di una *Macrocoma* per La Gomera.

Abstract: *Macrocoma splendens* Lindberg, 1950, is reported for the first time for La Gomera (Canary Islands) and examined specimens are compared with specimens collected at La Palma and Tenerife. This is the first citation of a *Macrocoma* species for La Gomera.

Key words: *Macrocoma*, Canary Islands, La Gomera, new data.

INTRODUCTION

In a review regarding *Macrocoma* of the Canary Islands, Zoia (2017) reported that there was no knowledge establishing a connection with La Gomera. I recently had the opportunity to examine a small series of a *Macrocoma* species from La Gomera that can be referred to *M. splendens* Lindberg, 1950, previously known from La Palma and Tenerife (Zoia, 2017: 80-81 and Figs 40-46 and 68).

Macrocoma splendens Lindberg, 1950

EXAMINED MATERIAL. Canary Is., La Gomera, Alto de Garajonay, 1350-1450 m, 20-24.6.2005, M. & J. Horák leg. (3♂♂, 7♀♀ - author's collection).

NOTES. Examined specimens are quite uniform in their habitus and coloration; females are somewhat bigger and stouter than males, otherwise hardly distinguishable in their exoskeletal characteristics. They fully match the characteristics reported in the key of Zoia, 2017: 77. Legs reddish, antennae reddish with antennomeres 7th-11th partially darkened distally. Dorsum metallic bronze with a dense punctation made of small but impressed punctures. Elytra with dense pubescence, partly arranged in nine more or less evident longitudinal rows of longer and erected setae.

Aedeagus as in Figs 1-2, somewhat more briefly rounded at apex in dorsal view than in specimens from both Tenerife and La Palma (Zoia, 2017: figs 42 and 45) and somewhat stouter in lateral view (Zoia, 2017: figs 43 and 46).

Spermatheca as in Fig. 3, with both spermathecal gland and ductus somewhat longer than in the specimen from Tenerife portrayed in Zoia, 2017: fig. 68; spermathecal gland ending in a small ovoidal widening.

From my point of view, said differences, although distinguishing the specimens from La Gomera, do not call for a taxonomic separation among populations of different islands.

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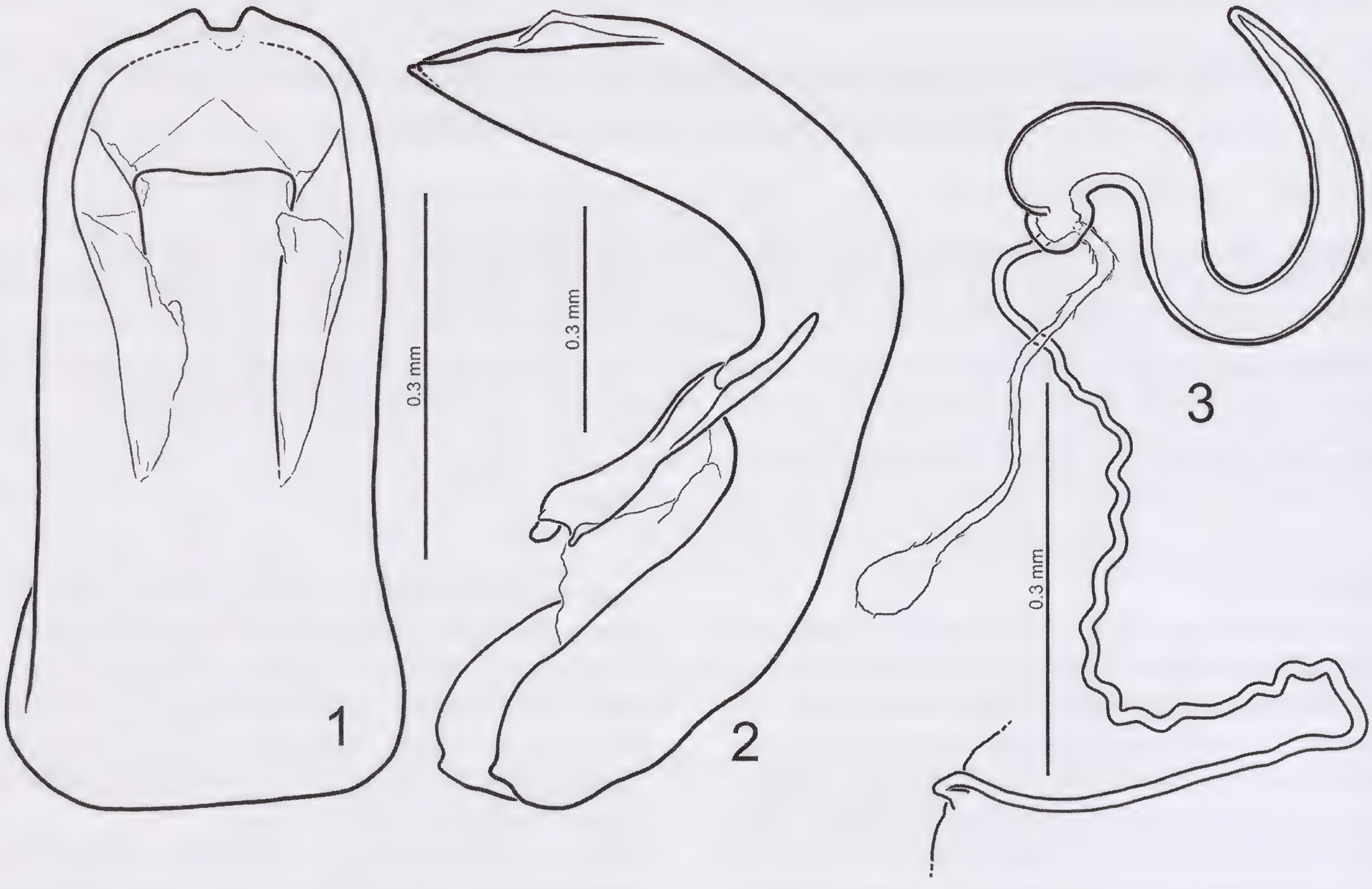

Figs 1-3. *Macrocoma splendens* (La Gomera, Alto de Garajonay, 1350-1450 m): 1 - aedeagus, dorsal view; 2 - idem, lateral view; 3 - spermatheca.

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Guido PEDRONI

Notes écologiques sur *Agrypnus fairmairei* (Candèze, 1889) de Madagascar (Coleoptera: Elateridae)

Résumé: Des notes écologiques sont présentées sur le Coléoptère Elateride *Agrypnus fairmairei* (Candèze, 1889), trouvé dans la forêt tropicale humide de Ranomafana à Madagascar, dans le bois d'*Eucalyptus* sp. en décomposition plus ou moins avancée.

Riassunto: *Annotazioni ecologiche su* Agrypnus fairmairei *(Candèze, 1889) del Madagascar (Coleoptera: Elateridae).*

L'autore presenta annotazioni ecologiche sul Coleottero Elateride *Agrypnus fairmairei* (Candèze, 1889), rinvenuto nella foresta pluviale tropicale di Ranomafana in Madagascar, nel legno marcescente di *Eucalyptus* sp.

Abstract: *Ecological notes on* Agrypnus fairmairei *(Candèze, 1889) from Madagascar (Coleoptera: Elateridae).*

Ecological notes are presented on *Agrypnus fairmairei* (Candèze, 1889) (Coleoptera: Elateridae), found in the tropical rainforest of Ranomafana in Madagascar, in the highly altered wood of E*ucalyptus* sp.

Key words: *Agrypnus fairmairei*, Madagascar, ecology, Ranomafana rainforest.

INTRODUCTION

Dans le cadre des recherches sur les Coléoptères Elateridae et Curculionidae présents sur les hautes terres de Madagascar d'Antananarivo à Fianarantsoa, menées pendant plusieurs années en même temps que des expéditions humanitaires, j'ai eu l'opportunité de collecter beaucoup de matériel intéressant qui, en partie, a servi de base à la production d'un première contribution sur les Elateridae récoltés dans les montagnes d'Antsirabe à Fianarantsoa (Pedroni & Riese, 2020).

Cette contribution fournit des notes écologiques sur le Coléoptère Elateride *Agrypnus fairmairei* (Candèze, 1889) collecté dans la forêt de Ranomafana (Fig. 1), et représente le développement de ce qui est brièvement exposé sur cette espèce, dans l'article de Pedroni & Riese (2020).

Le Parc National de Ranomafana, situé au nord-est de la ville de Fianarantsoa, a été créé en 1991, s'étend sur près de 42,000 hectares et depuis 2007 fait partie du complexe de la forêt tropicale d'Atsinanana, un site du patrimoine UNESCO.

MATÉRIAUX ET MÉTHODES

Cette note est basée sur la collecte des matériels suivants:

Madagascar, Fianarantsoa, Parc National de Ranomafana, 1200 m, 6.VIII.2018, 1♂ 1♀ Pedroni leg. (Collection Pedroni) (Fig. 2).

Une correspondance fréquente avec mon ami entomologiste, spécialiste des Elateridae de Madagascar, Hubert Piguet de Paris, a favorisé la rédaction de cet article. La détermination de l'espèce est basée sur plusieurs communications personnelles avec Piguet, sur la comparaison avec les spécimens de ma collection et sur la consultation de la maigre littérature disponible sur l'espèce. Des références importantes dans la littérature ont été les travaux de Hayek (1973; 1979).

RÉSULTATS ET DISCUSSION

Le genre *Agrypnus* Eschscholtz, 1829 à Madagascar est représenté par 111 espèces (Hayek, 1973; 1979), en Afrique continentale, elle compte 20 espèces (Girard, 2017).

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Comme de nombreuses espèces de plantes et d'animaux présentes à Madagascar, *Agrypnus fairmairei* est une espèce endémique de la grande île, liée aux milieux forestiers. C'est une espèce largement répartie sur le territoire, en fait elle est connue du Lac d'Alaotra dans la région de Toamasina (nord-est de Madagascar), de la région d'Ivondro (sud-est de Madagascar), des forêts au nord de Fort Dauphin et de celles de Manombo au nord de Tuléar (Sud-ouest de Madagascar) (Piguet *communication personnelle*).

Le Parc National de Ranomafana protège, promeut et améliore un écosystème de forêt tropicale humide d'une altitude minimale de 800 m à une altitude maximale de 1200 m (Fig. 1).

En général, dans les forêts, le bois en décomposition ou périssable a sa propre "communauté" vivante composée principalement d'invertébrés, et parmi eux, surtout les Insectes, qui sont des indicateurs efficaces de la biodiversité et du bon état de l'environnement. De très grande importance est la présence de bois mort dans les environnements forestiers humides, soumis à des processus chimiques et physiques de régénération des forêts, en particulier ceux riches en mégaphorbia (hautes-herbes).

Les essences arboricoles, selon leur présence dans la forêt (vivantes, sénescentes ou mortes), avec leurs différentes parties, fournissent un vaste assortiment de nutriments pour de nombreuses espèces de plantes, champignons et animaux. Parmi ces composantes d'une importance particulière, d'un point de vue écologique, se trouve la faune saproxylique, qui vit sur du bois mort ou pourri, le décompose et renvoie les différentes substances organiques ou non, dans l'environnement. Ces animaux sont principalement des Insectes et parmi eux les Coléoptères.

Le bois commence à se décomposer en raison de diverses espèces de champignons qui l'attaquent, le rendant attaquable par les Insectes.

Les spécimens adultes d'*Agrypnus fairmairei* ont été trouvés dans des cellules à l'intérieur du tronc d'un eucalyptus avec une circonférence et une hauter remarquables. À la base, l'arbre était encore vivant, et n'avait qu'une partie pourrie et en état de fragmentation en plusieurs petites parties polyédriques.

Fig. 1. Forêt de Ranomafana (photo 2018, G. Pedroni).

Le genre *Eucalyptus* Labill (famille des Myrtacées) est originaire d'Australie et de Tasmanie, compte actuellement environ 600 espèces et est maintenant largement introduit dans le monde entier. Dans des conditions optimales, les spécimens de certaines espèces peuvent atteindre et dépasser de 80-90 m de hauteur.

Les spécimens d'*Agrypnus fairmairei* ont été trouvés dans des cellules de nymphose-hivernage à une hauter de 40-50 cm du sol. Pendant la saison d'hiver (nous sommes dans l'hémisphère sud), les températures dans la forêt et en général sur le plateau central varient de 5-6°C la nuit, à 20-25°C pendant la journée. Chez cette espèce, les cellules sont préparées par les larves pour la métamorphose qui semble avoir lieu en période hivernale. La larve s'installe à un point du tronc où le bois est consommé, créant l'espace nécessaire à la cellule, déclenchant la métamorphose. La sciure qui recouvrait les parois des cellules peut être interprétée comme un produit de la nutrition qui, à un moment spécifique du cycle biologique, est utilisé comme revêtement sur la cellule elle-même.

Fig. 2. Habitus d'*Agrypnus fairmairei* (spécimen de Ranomafana) (photo 2019, R. Salmaso, Museo Verona).

Les cellules d'hivernage trouvées ont été positionnées dans l'aubier et recouvertes de taches de sciure de bois, accompagnées de la présence d'autres coléoptères, également dans des cellules similaires. On pense donc que les larves de l'espèce peuvent avoir fréquenté au moins la première partie de l'arbre juste sous l'écorce, se nourrissant de la partie interne de l'écorce elle-même, ou de la partie la plus superficielle du liber, en particulier dans la zone de l'aubier, la partie la plus externe du bois. Cette hypothèse n'exclut pas un régime larvaire, en partie, même zoophage. En ce qui concerne la phase de métamorphose compte tenu de ce qu'on a observé et du cycle biologique des autres coléoptères, par exemple, toujours chez les Elateridae et comme exemples simples, les espèces du genre *Ampedus* (dans ce cas les cellules sont de petites cavités aléatoires dans le bois) ou, parmi les Cerambycidae, l'espèce du genre européen *Rhagium* (dans ce cas les larves se nourrissent de bois, donc les cellules sont spécialement préparées), je crois qu'*Agrypnus fairmairei* peut être inclus dans le groupe des espèces saprophytes de Madagascar. En particulier, étant donné l'état altéré du bois où les adultes ont été trouvés, il semble qu'il s'agisse d'une espèce saproxylophage; en fait, ce groupe de décomposeurs attaque le bois dans un état de décomposition plus ou moins avancé.

De nouvelles possibilités d'observation de l'espèce, ainsi que d'autres espèces forestières du genre *Agrypnus*, pourront encadrer son écologie et sa biologie de manière de plus en plus précise.

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Linda ABENAIM* - Elisabetta ROSSI* - Domenico RIZZO** - Eric GUILBERT***

First report of *Stephanitis lauri* Rietschel, 2014 (Heteroptera, Tingidae) in Italy

Riassunto: *Primo ritrovamento di* Stephanitis lauri *Rietschel, 2014 (Heteroptera, Tingidae) in Italia.*
L'autore riporta il primo ritrovamento di *Stephanitis lauri* Rietschel, 2014 (Heteroptera, Tingidae) in Toscana e Liguria (Italia). La specie è stata osservata a Pisa (Toscana) e a Piano di Vezzano (La Spezia, Liguria) su piante di alloro. *S. lauri* è stato descritto per la prima volta in Grecia ed è stato segnalato in Costa Azzurra (Francia) nel 2017.

Abstract: The first report of *Stephanitis lauri* Rietschel, 2014 (Heteroptera, Tingidae) in Tuscany and Liguria (Italy). The species has been observed in Pisa (Pisa, Tuscany) and Piano di Vezzano (La Spezia, Liguria) on bay laurel plants. *S. lauri* has been firstly described in Greece and it was recorded in Cote d'Azur (France) in 2017.

Key words: Lace bug, bay laurel, Italy.

INTRODUCTION

Stephanitis lauri Rietschel, 2014, is a lace bug firstly described on samples collected in Crete island (Greece) in 2012, near Damnoni beach, (Rietschel, 2014) as a new species (Fig. 1). Later on, it was found in 2017 in the Southern France, at Villefranche-sur-Mer, Antibes, Cagnes-sur-Mer, Nice and Cannes (Streito *et al.*, 2018).

Stephanitis genus includes in Italy several autochthonous or exotic species living on host plants (mainly Ericaceae and Rosaceae); some alien species could also be found on Lauraceae and Salicaceae (Dioli *et al.*, 2015).

MATERIALS AND METHODS

Lace bug adults were collected in June 2020, following some inspections on ornamental plants in green areas throughout Tuscany, in particular in Pisa (PI) (43°71'49"N - 10°41'65"E, altitude 4 m asl) and in Liguria in Piano di Vezzano (SP) (44°07'38.7" N - 9°53'23.3" E, altitude 29 m asl), Italy. During the inspections, these specimens were found on some bay laurel plants. *Laurus nobilis* L., on which unusual symptoms were strongly visible. The specimens were collected, and afterwards they were analysed and identified through the stereomicroscope, comparing their morphology to the description of Rietschel (2014).

RESULTS AND CONCLUSIONS

The specimens belonged to *S. lauri,* which has been reported for the first time in Italy, in Liguria and Tuscany. The specimens of *S. lauri* were observed on *L. nobilis*, both on isolated plants and in hedges. On the lower side of leaves, adults of the lace bug were found along with their fecal spots. On the upper side of leaves, the feeding activity of the lace bug caused chlorotic discoloration (Fig. 2) in single points or generalized when the infestation was heavy. In the case of abundant populations, the damage on the leaves was evident and well recognizable, an aspect already observed in Crete and France. Some isolated specimens of *S. lauri* were also observed on the leaves of a *Cinnamomum camphora* (L.) J. Presl., tree located in La Spezia.

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Fig. 1. Tingid adult on a bay laurel leaf (photo by Riccardo Antonelli).

Fig. 2. Damage of *S. lauri* on bay laurel plant.

S. lauri identification was based on morphological characters (Rietschel, 2014). A possible relationship between *S. lauri* and *S. pyri* Fabricius, 1775 as well as between *S. pyrioides* Scott, 1874 and *S. oberti* Kolenati, 1857 has been supposed (Rietschel, 2014). The origin of *S. lauri* is very unclear, it is not certain whether it is an autochthonous species of Crete or an invasive insect accidentally introduced both into Crete and France. The hypothesis is that it could be an alien species, accidentally introduced into Europe. In recent years, in fact, reports of exotic insects have increased in Europe, and among them there are many Hemiptera Tingidae. Which arose considerable interest and concern as they cause serious damage to ornamental and wild plants. The outbreaks of *S. pyrioides* on azalea and rhododendron and *S. takeyai* Drake & Maa, 1955 on *Pieris japonica* (Thunb) D. Don and *Lyonia elliptica* (Siebold & Zucc.) Hand. -Mazz., are a case in point (Streito, 2006; Streito *et al*., 2010). Given the great ability to colonize and compromise laurel hedges, it is feared that this insect may be already present in the other parts of Italy and that it is continuing its outbreak throughout the territory and in other countries of Europe.

However, the systematics and taxonomy of Tingidae, family which includes about 2500 species and 300 genera worldwide, have been defined as a "hard and paradoxal task" (Guidoti *et al*., 2015); recently, the combination of molecular and morphological features has been proposed as a possible method to reassess the Tingidae systematics (Guilbert *et al*., 2014), due to the complexity of applying only morphological characters to discriminate among species.

Molecular assays are going on the DNA of *S. lauri* to assess its phylogenetic relationships with other *Stephanitis* species. The first evidence seems to confirm its genetic distance with *S. takeyai, S. pyrioides* and *S. pyri*.

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The origins of the names of Plecoptera genera and species occurring in the Italian Region

Riassunto: *Origine dei nomi dei generi e delle specie di Plecotteri della Regione Italica.*

Sono elencate le derivazioni dei nomi delle 177 specie di Plecotteri accertate in Italia. La maggior percentuale di nomi si riferisce a caratteristiche morfologiche della specie (56 specie), seguono quelli dedicati a stimati entomologi o a chi raccolse i primi esemplari (52 specie) e nomi riferiti a luoghi geografici o di derivazione etnologica (45 specie). Un numero limitato di specie (9) fa riferimento a peculiarità ecologiche, altre sono dedicate a un parente dell'autore (6) o anche a un artista o scienziato (3). Infine, 6 specie hanno un nome simbolico. Inoltre abbiamo compilato una particolareggiata bibliografia, elencando tutte le descrizioni originali di specie appartenenti alla plecotterofauna italiana.

Abstract: The origins of the names of the 177 species of stoneflies occurring in the Italian region are listed. These names chiefly refer to a taxonomic characteristic (56 species), then a dedication to a well-known entomologist or to the collector (52), then to either a geographical - ethnological (45) or to an ecological aspect (9). The remaining species are dedicated to someone in the author's family (6) or to an artist or scientist (3). Finally, 6 other species have a symbolic name. In addition, we also provide an exhaustive bibliography of the original species descriptions of the Italian Plecoptera fauna.

Key words: stoneflies, taxonomy, species name derivation, genus name derivation, Italy, Corsica, Sardinia, Sicily.

INTRODUCTION

Many times, considering the name of an insect species, one may wonder from where it had been derived or who was the person to whom it had been dedicated. Very often, though, names of both genera and species had been coined in a way that is not always understandable anymore to modern students, freed from the obligation to study Latin and Greek. Since the name of a species offers valuable hints and mnemotechnical clues that may shorten the identification process, we decided to summarize this kind of information on the etymology of the species names in this companion article to our study of the Italian stoneflies (Vinçon & Ravizza, in preparation). In addition, we also provide an exhaustive bibliography of the original species descriptions of the Italian Plecoptera fauna.

Authors have had their own ways to name new species. Most of them chose a name related to some feature in morphology, body colour and flight period. Some others preferred a geographic name associated with the country of the species. There are also many species dedicated either to the person who had collected the first specimen, or to other naturalists, to honour their work, or in memoriam of some scientist of the past. When proposing a new name, some authors explained its etymology, while others did not provide such information, probably because they believed the name to be self-explanatory. After several decades or centuries, however, the original meaning of taxonomic names tends to fade away and fall into oblivion. Moreover, the origins of the older names of species and particularly of genera are often difficult to understand, because they refer to taxonomic problems of the 18th and the 19th century not shared by modern entomologists.

NAMES OF THE GENERA

The names of the genera are listed according to the following systematic order of the families: Perlidae, Perlodidae, Chloroperlidae, Taeniopterygidae, Nemouridae, Leuctridae and Capniidae.

Perla Geoffroy, 1762. Properly speaking, Geoffroy did not coin the name Perla, but only restricted its scope to the order of the Plecoptera, mainly the large Perlidae, known at that time. The name Perla had been used already in the 17th century to designate

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Anisoptera, and Pictet (1841: 5-6) attributes its coining to the pearl-like aspect of their eyes. In the 18th century, the name Perla then served to designate a variety of taxa belonging, from the present point of view, to different orders or infraorders: Anisoptera, Plecoptera and Trichoptera.

Dinocras Klapálek, 1907. From the Greek δεινός "terrible, terrifying" (changed to "dino", like in "Dinosaur") and κράσ "head", alluding to the particular design of the cephalic mask of the genus.

Perlodes Banks, 1903. From the genus *Perla* and the Greek suffix "*-ōdēs*", meaning "having the aspect of". *Perlodes* is a replacement name created by Banks for the preoccupied *Dictyopteryx* of Pictet (1841).

Besdolus Ricker, 1952. From Russian: *bez* "without" and *dolya* "lobe", because the males of this genus lack the ventral lobe on the 7th sternite (Ricker 1976).

Dictyogenus Klapálek, 1904. From Greek δίκτυον "net", referring to the reticulated aspect of the wing venation.

Isogenus Newman, 1833. From Greek ἴσος "equal"; this new genus was created to set apart the Perlidae (of the British fauna) with brachypterous males (*Dinocras cephalotes*, *Perla bipunctata* (*carlukiana*)) from those where males and females were both macropterous, i. e. had the same lengths of wings in both sexes (Newman, 1836).

Isoperla Banks, 1906. From Greek ἴσος "equal". *Isoperla* had been coined by Banks in contrast to another (Nearctic) genus, namely *Alloperla*. Both names refer to details in wing venation. "I therefore do so, using the name *Isoperla* for those forms having the median vein extending basally parallel to the radius, and *Alloperla* for those forms having the median united to the radius at base." (p. 175)

Chloroperla Newman, 1836. From Greek χλωρός, meaning greenish-yellow, pale green, pale, (verdant) and the genus *Perla*.

Siphonoperla Zwick, 1967. From Greek σίφων "small tube". This genus is named after the tubular or siphon-shaped male copulatory organ.

Xanthoperla Zwick, 1967. A compound word from Greek ξανθός "yellow" and *Perla*, i.e. a yellow Perlidae.

Brachyptera Newport, 1848. The first described species of this genus was Pictet's *trifasciata* the male of which is short-winged.

Rhabdiopteryx Klapálek, 1902. According to Klapálek himself, the name is composed of the Greek ῥαβδίον "stripe" and πτέρυξ "wing". The name probably refers to the oblique dark stripes on the forewings.

Taeniopteryx Pictet, 1841. According to Pictet himself, the name is composed of the Greek ταινία "ribbon" and πτέρυξ "wing", referring probably to the grey bands crossing obliquely the forewings.

Nemoura Latreille, 1796. From the Latin *nemo* "none" and the Greek οὐρά "tail", to indicate that there are no caudal cerci in this genus, in contrast to what Latreille considers as *Perla*.

Protonemura Kempny, 1898. From Greek πρῶτος "first" and the genus *Nemoura*. This new genus is placed first in the family of the Nemouridae.

Amphinemura Ris, 1902. From Ancient Greek ἀμφί "around, on both sides of, all around, about" and *Nemoura*.

Nemurella Kempny, 1898. The genus *Nemoura* (*Nemura*) flanked by the Latin diminutive word-forming element *-ella*.

Leuctra Stephens, 1836. This genus name is somewhat enigmatic, and no explanation for its origin is offered. The name "Leuctra" is known only as a Greek place name, famous for the battle that took place there between the Thebans and the Spartans in 371 BC. The genus *Leuctra* had been coined by Stephens for the species *Leuctra geniculata*.

Tyrrhenoleuctra Consiglio, 1957. This name is composed of *Tyrrhenian* and *Leuctra*, to name a genus whose species only occur in the region of the Tyrrhenian Sea. *Tyrrhenoleuctra* is a replacement name for the preoccupied *Strobliella*, the latter named after the first collector (Strobl) by Klapálek 1901.

Capnia Pictet, 1841. From the female of the Latin *capnios*, or Greek κάπνιος, which means "dark", an adjective used by Pliny to describe a very dark sort of grapes. The species described by Pictet (1841) under this new genus is *Capnia (Perla) nigra*, also pointing to the overall dark aspect of this taxon.

Capnioneura Ris, 1905, 1913. The wing venation of this genus resembles the one of the genus *Capnia,* whereas other aspects, notably its cerci, make it differ from it. From the genus *Capnia* and the Greek νεῦρον "nervation, venation".

Capnopsis Morton, 1896. From Greek ὄψις "resembling in appearance, alike or similar" and the genus *Capnia*. This genus was first described by Rostock (1892) under the genus *Capnodes*. Morton noted that this genus was preoccupied and proposed therefore the new genus replacement name *Capnopsis*.

Zwicknia Murányi, Gamboa & Orci, 2014. These are the wordings of the original dedication: "The genus is dedicated to Prof. Peter Zwick, Schlitz, Germany, in recognition of his major contributions and establishing leadership in many fields of study of the Plecoptera. The name composed with the ending "nia" corresponding to *Capnia*; gender feminine."

Names of the Species

abdominalis (*Perla abdominalis* Burmeister, 1839). From Latin *abdomen, abdominis* "abdomen, belly". The name refers to the characteristic orange colour of the abdomen.
albida (*Leuctra albida* Kempny, 1898). From Latin *albidus* "white, pale". The original description explains the name "*albida*" by the paler colour of the wings, as compared to other species of *Leuctra* (p. 13).
algovia (*Protonemura algovia* Mendl, 1968). The first series of specimens was collected in the Allgäu in the south of Germany. *Algovia* corresponds to the Latin name of the German "Allgäu".
alpinum, alpina (*Dictyogenus alpinum* (Pictet, 1841); *Rhabdiopteryx alpina* Kühtreiber, 1934; *Leuctra alpina* Kühtreiber, 1934). From Latin *alpina* "inhabiting the Alps"; all three species are widespread in the Alps.
ameliae (*Leuctra ameliae* Vinçon & Ravizza, 1996). It is dedicated to Amélia Vinçon, daughter of Gilles Vinçon.
andreinii (*Isoperla andreinii* (Festa, 1938)). It was named in honour of Alfredo Andreini (1870-1943), a medical officer who was an amateur entomologist and a smart collector of insects, chiefly Coleoptera, both from Libya and from the northern Apennines.
annae (*Leuctra annae* Consiglio,1975). It was dedicated to Anne, the author's wife.
apenninicola (*Leuctra apenninicola* Ravizza, 1988). From the Latin suffix *-cola* "dwelling, cultivating" and Apennini "Apennines".
apicalis (*Xanthoperla apicalis* (Newman, 1836)). From Latin *apicalis* "apical". The origin of the name is unclear; the wording of the original description (p. 501) is as follows: *Tota luteo-viridis, oculis antennarum apicibusque nigerrimis.* "Entirely of a pale delicate green, with the eyes and extreme portions of the antennae intensely black." The epithet *apicalis* hence refers to the deeply black apical parts of the eyes and antennae.
archimedis (*Leuctra archimedis* Consiglio, 1968). This species, endemic to Sicily, was named in honour of the famous ancient scientist Archimedes (288 BC-212 BC) who lived in Syracuse, a town in Sicily.
armata (*Leuctra armata* Kempny, 1899). From Latin *armata* "armed". The original description explains the name "*armata*" by the shield-like shape of the abdominal plate of male adults (p. 275).
auberti (*Brachyptera auberti* Consiglio, 1957; *Protonemura auberti* Illies, 1954; *Leuctra auberti* Ravizza & Ravizza Dematteis, 1985). Species named in honour of the Swiss entomologist Jacques Aubert (1916-1995) author of more than one hundred papers on Plecoptera that contain the description of nearly 150 new species. Jacques Aubert undertook several collecting trips to Italy and described a great number of new species from this country. He was a curator and later the director of the Musée zoologique of Lausanne, and also professor of entomology in the Lausanne University and for many years, editor of the *Mitteilungen der Schweizerischen entomologischen Gesellschaft.*
aubertorum (*Leuctra aubertorum* Ravizza & Ravizza Dematteis, 1994). In the last years of his life Aubert carried out researches on stoneflies on the Swiss Ticino Canton together with his wife Cécile and his first-born son Charles-Edouard. Among the Plecoptera collected by them there was a single male of this species. "*Aubertorum*", genitive plural form, hence refers to the family of Jacques Aubert as a whole.

ausonia (*Protonemura ausonia* Consiglio, 1955). From Latin *Ausonia*, i. e. the country of the Ausonii an autochthonous population inhabiting Southern Italy.
austriaca (*Protonemura austriaca* Theischinger, 1976). The type series was collected in the Austrian Alps.
autumnalis (*Leuctra autumnalis* Aubert, 1948). From Latin *autumnalis* "autumnal", referring to the flight period of this species.
biellensis (*Leuctra biellensis* Festa, 1942). The first collected specimens were from Biellese a Piedmont historic region at the far southern end of the Pennine Alps.
bipartita (*Protonemura bipartita* Consiglio, 1962). From Latin *bipartitus* "divided into two parts". The male has the styli separated from the subgenital plate in the paraprocts.
bipunctata (*Perla bipunctata* Pictet, 1833). From the prefix *bi-* "two, double" and *punctatus* "with dots". The name of this species, originally described from larval material, refers to the two round dark patches on both sides of the pronotum (Pictet 1833, p. 56; Pictet 1842, plate 11, fig. 1) of the larvae.
boreoni (*Leuctra boreoni* Aubert, 1962). It was discovered in the Boréon valley in the French Maritime Alps.
braueri (*Leuctra braueri* Kempny, 1898). Dedicated to the Austrian entomologist Friedrich Moritz Brauer (1832-1904) who was Professor of Zoology and Director of the Naturhistorisches Hofmuseum,Vienna; later he was appointed Professor of zoology in the University. He wrote many papers on Diptera and Neuroptera.
brevipennis (*Leuctra brevipennis* Ravizza, 1978). New adjective created from the Latin *brevis* "short" and *penna* "wing", referring to the shortwingedness in both sexes.
brevistyla (*Protonemura brevistyla* Ris, 1902). New adjective created from the Latin *brevis* "short" and *stylus* "style", referring to the very short style of this species compared to *Protonemura nimborum* or *P. intricata*.
bucolica (*Protonemura bucolica* Consiglio, 1957). From Greek *βουκολικός* "pastoral, shepherd's", or from *βουκόλος* "oxen shepherds". Why this species has this name is not explained by the author, but "*bucolica*" seems to be a way to refer indirectly to Corsica, because this epithet is commonly associated with this island, where everything is "bucolic", from the trains to the hotels and the food. The association of Corsica with "bucolica" probably reaches back to Vergil's *Bucolica*.
budtzi (*Leuctra budtzi* Esben-Petersen, 1912). It was dedicated to Vilhelm Ferdinand Budtz (1855-1925), who collected in Corsica the first specimens of this species.
calabrica (*Brachyptera calabrica* Aubert, 1953). From Latin *calabricus* "from Calabria". This species inhabits Calabria, the far south region of the Italian peninsula.
canavensis (*Leuctra canavensis* Ravizza & Ravizza Dematteis, 1992). This species is named after the Canavese (*Canavesium* in Latin), a historic region of Piemonte (Italy, Graian Alps). It is the only site in which this species has presently been found.
caprai (*Leuctra caprai* Festa, 1939; *Protonemura caprai* Aubert, 1954) Named in honour of the Italian entomologist Felice Capra (1896-1991), who was curator of the entomologic collections of the Natural History Museum of Genoa for about 35 years. Moreover for 30 years he was editor of the Società entomologica italiana reviews.
carbonaria (*Isoperla carbonaria* Aubert, 1953). From Latin *carbonarius* "related to charcoal", probably an allusion to the black abdomen of the adults of this species.
cephalotes (*Dinocras cephalotes* (Curtis, 1827)). From Greek *κεφαλή* "head". The species has a large and broad head.
cinerea selene (*Nemoura cinerea selene* Consiglio, 1959). In Greek mythology, Selene is the personification of divine order of the full Moon. The name probably refers to the main distinctive feature of this new subspecies: the head of the paraproct is half-moon shaped, which is not the case in the nominal species.
cingulata (*Leuctra cingulata* Kempny, 1899). From Latin *cingulatus* "with a belt", because the abdomen of this species is provided with an arched, well pigmented band.
concii (*Leuctra concii* Consiglio, 1958). Species dedicated to Cesare Conci (1920-2011) who collected in Liguria the first specimens of this species. Conci was a specialist of Odonata, of which he published the first volume of the Fauna d'Italia, as well as Mallophaga and Homoptera Psylloidea. He was curator then director of the Natural History Museum of Milan. Moreover he was President of the Italian entomological Society for almost 30 years.

consiglioi (*Protonemura consiglioi* Aubert, 1953). For more than 20 years Carlo Consiglio (born in 1929 at Rome) studied Odonata and particularly Plecoptera of which he described one new genus (*Tyrrhenoleuctra*) and 19 new species most of them endemic to Italy. At the University of Rome, he was at first professor of entomology, then full professor of zoology, devoted to nature conservation.
corsicana (*Protonemura corsicana* (Morton, 1930)). This species is endemic to Corsica.
costai (*Protonemura costai* Aubert, 1953; *Leuctra costai* Aubert, 1953). In honour of the Italian entomologist Achille Costa (1823-1898), who was professor of Zoology at the University of Naples. In his collections there were a few dry pinned specimens of these species.
cyrnea (*Leuctra cyrnea* Consiglio & Giudicelli, 1965). From Latin *Cyrnos* after the Greek Κύρνος "Corsica".
delmastroi (*Leuctra delmastroi* Vinçon, 2012). Dedicated to Giovanni Delmastro an Italian entomologist and hydrobiologist who collected many stoneflies in the western Italian Alps and Liguria.
dolasilla (*Leuctra dolasilla* Consiglio, 1955). This name derived from princess Dolasilla, tied to a cycle of legends from the region of the Dolomites, mountains from which the specimens belonging to the type series were collected.
dylani (*Leuctra dylani* Graf, 2007). In honor of Bob Dylan a poet and musician (Robert Allen Zimmerman) born in Duluth (Minnesota USA) in 1941, who was awarded the Nobel Prize in literature in 2016.
elisabethae (*Protonemura elisabethae* Ravizza, 1976; *Leuctra elisabethae* Ravizza, 1985). These species were dedicated by the author to his beloved wife Elisabetta Dematteis, partner in life and in collecting and studying Stoneflies. She was at first curator of the zoological museum then professor of zoology at the University of Milan.
ferreri (*Dinocras ferreri* (Pictet, 1841)). The author found two adult males of this species collected near Torino, in the collection donated by the canon Gian Battista Ferrero (1756-1836) to the Geneva museum. The species was dedicated to him in memoriam.
festai (*Leuctra festai* Aubert, 1954). Named in honour of the Italian amateur plecopterologist Aldo Festa (1914-2001) from Genoa. In his youth, F. Capra who was his mentor, directed him to study Plecoptera. He was a pioneer in Italy in this kind of studies and described five new species, all endemic to Italy, with all of them confirmed as new species by the British plecopterologist Martin Mosely.
flexuosa (*Nemoura flexuosa* Aubert, 1949). From the Latin *flexuosus* "bent"; refers to the slightly excised medial edge of the male paraprocts (Aubert, personal communication).
fochettii (*Leuctra fochettii* Vinçon & Vitecek, 2017). Species named in honour of Romolo Fochetti, born in 1958 at Roma, for his contributions to the knowledge of the Italian Plecoptera. Fochetti is the co-author of the volume *Plecoptera* in the Fauna d'Italia series. At present he is a professor of zoology at Tuscia University (Viterbo).
fontium (*Dictyogenus fontium* (Ris, 1896)). From Latin *fontium* genitive plural of the Latin *fons "spring",* hence "of springs", since the species occurs at high altitude mainly in the headwaters of glaciers, brooks and rivulets.
fraterna (*Leuctra fraterna* Morton, 1930). From Latin *fraterna* "brotherly, fraternal". As to the name the author explains that the two paired parallel abdomen processes "have the apex shaped more like a bird's head, the beaks turned inwards and connected by a narrow, very slightly strip".
fulviceps (*Nemoura fulviceps* Klapálek, 1902). From Latin *fulvus* "fulvous" and *ceps* for *caput* "head". Fulvous-headed species, by the rear part of the light brown head.
fusca (*Leuctra fusca* (Linnaeus, 1758)). From Latin *fusca* "brown", probably referring to the brown colour of the body, which is, however, common to many other *Leuctra* species.
gardinii (*Leuctra gardinii* Ravizza, 2005). This wingless *Leuctra* was dedicated to the Italian entomologist Giulio Gardini from Genoa, who collected its first specimens. He is a specialist of Arachnida, Pseudoscorpionida.
gattolliati (*Zwicknia gattolliati* Vinçon & Reding, 2018). Species dedicated to Jean-Luc Gattolliat, curator in the Musée cantonal de zoologie, Lausanne, who collaborated with the authors to recognize this new species.
geniculata (*Leuctra geniculata* Stephens, 1836). From Latin *geniculatus* "knotty", provided with knots, relating to the sclerotized processes protruding from the basal segments of nymphal antennae.
grammatica (*Isoperla grammatica* (Poda, 1761)). The creation of the species name *Isoperla grammatica*

is traditionally attributed to Poda (1761, p. 99, sub nom. *Phryganea grammatica*) and the city of Graz (Austria) recorded as its type locality, and not Greece, as some authors pretend, since the Latin *Graecia* refers to the Austrian city (Rupprecht 1984). The attribute *grammatica*, "lettered" "inscribed" refers to a letter « V » or « C » engraved on the frontoclypeus of the species and is supposed to correspond to the typical dark horse-shoe mark on the frons of *Isoperla grammatica*. The adjective "*grammatica*" refers to the Greek γράμμα "letter". Poda's original Latin description says: *fronte V. vel C. nigro inscripta* "a black letter V or C inscribed on the forehead".

grafi (*Leuctra grafi* Vinçon & Vitecek, 2017). Species named in honour of Wolfram Graf for his contribution to the knowledge of the Austrian Stoneflies. Wolfram Graf is an aquatic biologist and entomologist who works mainly on Trichoptera, Plecoptera and other aquatic insects. He is professor of Hydrobiology at Vienna University.

grandis (*Perla grandis* Rambur, 1842). From Latin *grandis* "large", referring to the dimension of the species, the largest among all European Perlidae.

hamulata (*Xanthoperla hamulata* (Morton, 1930)). From Latin *hamus* "hook, hooked", from which the adjective *hamulatus* "with a hook" is derived, referring to the hook-shaped male epiproct. The original description by Morton says "Anal appendage seen from above dark brown at its base, the exposed part mostly pale".

handlirschi (*Leuctra handlirschi* Kempny, 1898). Species named in honour of the Austrian entomologist Anton Handlirsch (1865-1935). He studied Hymenoptera and Hemiptera and became director of the department of entomology of the Natural History Museum of Vienna.

harperi (*Rhabdiopteryx harperi* Vinçon & Murányi, 2009). Dedicated to Pierre-Paul Harper (1942-2019), a Canadian entomologist who studies for many years the Plecoptera of Canada and other regions.

helenae (*Protonemura helenae* Nicolai, 1985). Dedicated to Helen, the author's wife.

helvetica (*Leuctra helvetica* Aubert, 1956). From Latin "*helveticus*", adjective derived from the Confoederatio Helvetica, the Helvetian Confederation, or Switzerland. The specimens of the type series of this species have been collected in the Swiss Central Alps. This species was first described by Aubert 1954a under the preoccupied name *Leuctra variabilis*. The Latin name *variabilis* "variable" refers, according to Aubert, to the subtle morphological variations of this species, which has affinities with *Leuctra niveola*, *L. prima* and *L. pseudosignifera*.

hesperiae (*Nemoura hesperiae* Consiglio, 1960). From Greek Ἑσπερία, Latin *Hesperia*, the people of a western country, that is Italy.

hexacantha (*Leuctra hexacantha* Despax, 1940). From Greek ἕξ "six" and ἄκανθα "thorn", "bearing six thorns", which refers to the three paired processes on the 6th, 7th and 8th male abdomen terga.

hippopus (*Leuctra hippopus* Kempny, 1899). From Greek ἵππος "horse" and *πούς* "foot", because the paired processes on the 8th male tergum remind of a horse hoof.

hirpina (*Protonemura hirpina* Consiglio, 1958). From Latin *Hirpini*, an ancient Samnite people settled in Southern Italy.

hrabei (*Protonemura hrabei* Raušer, 1956). This species was dedicated to the Czechoslovakian entomologist Sergej Hrabe (1899-1984), an eminent specialist of subterranean and cavernicolous aquatic insects.

hyblaea (*Isoperla hyblaea* Consiglio, 1961). It is the Latin name of *Megara Iblea*, an ancient Greek colony sited near the present town of Augusta in Sicily and at present a mountain group.

ichnusae (*Protonemura ichnusae* (Consiglio, 1957)). From Greek Ἰχνοῦσα, one of the names which had been given to Sardinia by the ancient Greeks.

illiesi (*Perla illiesi* Braasch & Joost, 1973; *Nemoura illiesi* Mendl, 1968). Named in honour of Joachim Illies (1925-1982), a German entomologist and hydrobiologist who published many papers on the Plecoptera of the world, including a world catalogue of the order. He was head of the *Limnologische Flussstation Schlitz* which he turned into a Mekka for students of Plecoptera.

illyrica (*Isoperla illyrica* Tabacaru, 1971). For the Romans, Illyria was the region corresponding to the western section of the Balkan Peninsula, towards the south-eastern coast of the Adriatic Sea, inhabited by the Illiri, an ancient Indo-European population.

ilvana (*Isoperla ilvana* Consiglio, 1958). This species is endemic to Elba (in Latin *Ilva*), the largest island of the Tuscan Archipelagos in the Tyrrhenian Sea.

incudensis (*Leuctra incudensis* Vinçon & Ravizza, 2000). The species is named after the Incudine Mount in the south of Corsica where this species had been discovered.

inermis (*Leuctra inermis* Kempny, 1899). From Latin *inermis* "unarmed", as the males of this species have no sclerified appendages on the abdominal tergites.
insubrica (*Leuctra insubrica* Aubert, 1949). *Insubria* is a historic region, corresponding to the territory sited between the Po River and the pre-alpine lakes, inhabited in the proto-historic period from the IV century BC by the Insubri.
insularis (*Isoperla insularis* (Morton, 1930)). From Latin *insularis* "belonging to an island". This species is endemic to Corsica and Sardinia islands.
intricatus, intricata (*Perlodes intricatus* (Pictet, 1841); *Protonemura intricata* Ris, 1902). From Latin *intricatus* "entangled, intricate, complex, complicated". In both species wings have a complicated vein net.
italica (*Siphonoperla italica* (Aubert, 1953); *Protonemura italica* Aubert, 1954). Both species are endemic to the Italian Region.
jahorinensis (*Leuctra jahorinensis* Kacanski, 1972). After the Jahorina Mountains in Bosnia, type locality of this species.
julia (*Protonemura julia* Nicolai, 1983). This species was discovered in the Julian Alps.
juliettae (*Leuctra juliettae* Vinçon & Graf, 2011). This species occurs in the Pre-Alps close to Verona, so the authors dedicate it to the emblematic Verona lovers, Romeo and Juliette.
kir (*Isoperla kir* Fochetti & Vinçon, 1993). *Kir* was the Phoenician name of Corsica, the island from which this species is endemic.
kühtreiberi (*Taeniopteryx kühtreiberi* Aubert, 1950). Dedicated to the Austrian plecopterologist Josef Kühtreiber (1908-1996), who was the author of an important monograph on the North Tirol Stoneflies.
lagrecai (*Protonemura lagrecai* Aubert, 1954). It was dedicated to Marcello La Greca (1914-2001) an Italian entomologist and biogeographer. He studied mainly Orthoptera and Mantodea and was a professor of compared anatomy and zoology, first at Naples then at Catania.
lateralis (*Protonemura lateralis* (Pictet, 1836)). From Latin *lateralis* "lateral", referring probably to the yellow pronotum margins.
leptogaster (*Leuctra leptogaster* Aubert, 1949). Derived from the Greek λεπτός "delicate", and γαστήρ "stomach", for its thin and slender abdomen.
ligurica (*Leuctra ligurica* Aubert, 1962) From Latin *ligurica*, corresponding adjective to the Liguria, the region in which this apterous species is to be found. It lives in a restricted hilly area between the Alps and the Apennines.
lucana (*Nemoura lucana* Nicolai & Fochetti, 1991). From Latin *Lucania*, a Southern region of Italy where this species had been discovered.
lugens (*Isoperla lugens* Klapálek, 1923). From Latin *lugens* "mourning, grieving, lamenting". This species has a dark appearance with blackish-brown cerci.
macrura (*Protonemura macrura* Aubert, 1953). From the Greek words *μακρός* "large", and *οὐρά* "tail". This species is characterized by the length of the cerci which look like a double tail.
major (*Leuctra major* Brinck, 1949). From Latin comparative *major* "larger", because it is larger compared to the other *Leuctra* species.
marginata (*Perla marginata* (Panzer, 1799); *Nemoura marginata* Pictet, 1836). From Latin *marginata* "with a well marked edge or margin". The epithet "marginata" is the most commonly used in botanical and zoological names, generally without any explicit information as to its derivation. Neither Pictet (1836) nor Panzer (1799) explain the reasons why they chose this epithet.
megacephala (*Dinocras megacephala* Klapálek, 1907). The name is derived from the Greek μέγας "large" and κεφαλή "head" and refers to the wide head of this species.
mercuryi (*Taeniopteryx mercuryi* Fochetti & Nicolai, 1996). This species has been dedicated to Freddie Mercury (1946-1991), the emblematic singer of the Queen, a Rock group.
meridionalis (*Leuctra meridionalis* Aubert, 1951). This species was described based on specimens collected in the Ticino Canton on the southern slopes of the Swiss Alps. From the Latin *meridionalis* "mid-day, when the sun is in the south".
meyeri (*Protonemura meyeri* (Pictet, 1841)). Dedicated to Rudolf Ludwig Meyer-Dür (1812–1885). He was a Swiss entomologist who specialized in Hemiptera, Orthoptera and Neuroptera. He was a founding Member of the Swiss Entomological Society (Société Entomologique Suisse).
microcephalus (*Perlodes microcephalus* (Pictet, 1833)). Derived from Greek μικρός "small" and κεφαλή "head". This species has a head that is smaller than the one of the related *Perlodes intricatus*.
minima (*Nemoura minima* Aubert, 1946). From the Latin *minimus* "smallest". It is the smallest species among the genus *Nemoura*.

monilicornis (*Brachyptera monilicornis* (Pictet, 1841)). The antennal segments are rounded and well separated from each other, like beads. From Latin *monile* "neck-lace" and *cornum* "antenna".
montana (*Siphonoperla montana* (Pictet, 1841)). Latin *montanus* "mountainous". This species occurs in many types of watercourses in the Alps.
mortoni (*Nemoura mortoni* Ris, 1902; *Leuctra mortoni* Kempny, 1899). These species were dedicated to Kenneth J. Morton (1858–1940), a Scottish entomologist with a particular interest in the study of Odonata, Neuroptera and Plecoptera.
moselyi (*Leuctra moselyi* Morton, 1929). Species named in honour of the British entomologist Martin Ephraim Mosely (1867-1948). As an amateur he devoted much of his spare time to study Ephemeroptera, Plecoptera and chiefly Trichoptera, publishing over 100 scientific papers.
muranyii (*Leuctra muranyii* Vinçon & Graf, 2011). Dedicated to the Hungarian entomologist Dávid Murányi. His publication list now includes many papers on Far Eastern fauna; he lived in Japan for over a year and travelled in China as well. He established the genus *Zwicknia* and described many stonefly species from eastern Europe and from the Oriental region.
nebulosa (*Taeniopteryx nebulosa* (Linnaeus, 1758)). From Latin *nebulosus* "misty"; to indicate the opaque wings with little marked veins.
neglecta (*Rhabdiopteryx neglecta* Albarda, 1889). From Latin *neglectus* (feminine *neglecta*) "disregarded, ignored, neglected". The species was neglected because confused with another species, namely *Taeniopteryx nebulosa*.
nemuroides (*Capnioneura nemuroides* Ris, 1905). The name reminds us of the feature of a *Nemoura* species, whereas its wing venation is close to that of *Capnia*.
nigra (*Capnia nigra* (Pictet, 1833)). From Latin *niger* "black" for the dark colour of this species.
nimborella (*Protonemura nimborella* Mosely, 1930). From Latin *-ella*, a diminutive word-forming element, so *nimborella* refers to a small-sized *P. nimborum*.
nimborum (*Protonemura nimborum* Ris, 1902). From the genitive plural of the Latin *nimbus* "cloud, or dark grey cloud that often produces rain or snow". The reason for this name is unclear. The name perhaps refers to the "cloudy" aspect of the wing venation.
nitida (*Protonemura nitida* (Pictet, 1836)). From Latin *nitidus* "shining". The original description (p. 179) emphasises the shining (= *nitidus*) black head and pronotum, thought to be characteristic of the taxon.
niveola (*Leuctra niveola* Schmid, 1947). The adjective *niveola* is not attested in classical Latin; it is, however, a common botanical epithet. By its etymology, the name is related to snow and hence points to the early flight period of this species which is often found walking on snow.
nubeculum (*Isogenus nubeculum* Newman, 1833). *Nubeculum* is a Latin expression of post-classical origin, used mainly in zoology to point to characteristics denoting a stained aspect. The term is related to the Latin *nubes* "cloud". The name refers to the cloudy stain on the wings distinctive of this genus.
obscura (*Isoperla obscura* (Zetterstedt, 1840)). From Latin *obscurus* "dark, shadowy, indistinct". The general colour of this species is dark-yellow, usually well pigmented.
obtusa (*Nemoura obtusa* Ris, 1902). From Latin *obtusus* "blunted, not sharp", referring to the blunt paraprocts of the male.
oenotriae (*Isoperla oenotriae* Consiglio, 1967).The Oenotrians were an ancient people of Greek origin who inhabited a territory from Paestum to southern Calabria in southern Italy.
orobica (*Isoperla orobica* Ravizza, 1975). The name derives from the Orobian Alps where the species was found.
oropensis (*Nemoura oropensis* Ravizza & Ravizza Dematteis, 1980). This species occurs in the headwater of the Oropa stream, in the Biellese, an historic Piedmont region in the southern slopes of the Pennine Alps.
orsiera (*Leuctra orsiera* Ravizza & Vinçon, 2003). By the Orsiera Mount near Susa, where was collected the type series of this species.
oxylepis (*Isoperla oxylepis* (Despax, 1936)). A compound word, from Greek οξύς "sharp, pungent, pointed" and λεπίς "scale". Despax was the first who studied the penial armature of *Isoperla*, and felt this species had very sharp scales.
padana (*Protonemura padana* Vinçon & Ravizza, 2005). From Latin *Padanus* derived from *Padus*, the Latin name of the Po River.
palliventris (*Nemoura palliventris* Aubert, 1953). Compound name from Latin *pallidus* "pale yellow-green" and *venter* (genitive *ventris*) "belly" alluding to the pale abdomen of the adults.
pasquinii (*Leuctra pasquinii* Consiglio, 1958). The author has dedicated this species to Pasquale Pasquini

(1901-1977), his Professor of zoology at the University of Rome, who granted financial support to researches on Plecoptera in Central Italy.

pesarinii (*Nemoura pesarinii* Ravizza & Ravizza Dematteis, 1979). The first specimens of this species were collected by Carlo Pesarini (1946-2017), who was curator of invertebrate collections in the Natural history Museum of Milan and researcher of Coleoptera and Araneidae.

petricola (*Capnioneura petricola* Giudicelli, 1967). From Latin *petra* "rock" and the suffix *-cola* "dwelling, cultivating". The species inhabits temporary brooks drying out in summer; adult specimens were collected by the author under stones in December.

pictetii (*Nemurella pictetii* Klapálek, 1900). Named in honour of the Swiss zoologist and palaeontologist François-Jules Pictet (1809-1872) who was the first to publish in 1841 a very important handbook on Plecoptera containing the descriptions of a number of new species, and completed with a volume of Stonefly full colour paintings. He established the genera *Taeniopteryx* and *Capnia*.

praecox (*Protonemura praecox* (Morton, 1894)). From the Latin *praecox* "very early". The name refers to the emergence period of the species in early spring.

prima (*Leuctra prima* Kempny, 1899). From Latin *prima* "first", as it is one of the first *Leuctra* emerging in winter, adults being found often on snow.

pseudorosinae (*Leuctra pseudorosinae* Aubert, 1954). Closely related to *L. rosinae,* with which it might be confused.

pusilla (*Leuctra pusilla* Krno, 1985). From Latin *pusillus* "tiny, little", probably because the size of the species is smaller than the average *Leuctra* size.

queyrassiana (*Leuctra queyrassiana* Ravizza & Vinçon, 1991). It was named after the Queyras massif in the French Hautes Alpes.

rauscheri (*Leuctra rauscheri* Aubert, 1957). This species was named in honour of the Czech plecopterologist Jaroslav Raušer (1925-1993). By profession he was a geographer in the Prague University, but always loved to work on stoneflies publishing more than 20 papers.

ravizzai (*Leuctra ravizzai* Ravizza Dematteis & Vinçon, 1994). Born in 1934 at Milan, he is an amateur entomologist, who for half a century dealt with European Stoneflies, mainly the ones occurring in the Italian Region.

ravizzarum (*Besdolus ravizzarum* Zwick & Weinzierl, 1995). The Ravizza couple collected a series of specimens that they classified as *Dictyogenus ventralis*, but it was a new species which was named in their honour.

risi (*Brachyptera risi* (Morton, 1896)). Friedrich Ris (1867-1931) was a Swiss entomologist who specialised in Odonata. He was Director of a psychiatric clinic in Rheinau, Switzerland.

rivorum (*Nemoura rivorum* Ravizza & Ravizza Dematteis, 1995). From Latin genitive plural of *rivus* "brook, stream, streamlet".

rivulorum (*Isoperla rivulorum* (Pictet, 1841)). From Latin genitive plural of *rivulus* diminutive of *rivus* "a small brook, rivulet".

rosinae (*Leuctra rosinae* Kempny, 1900). Species dedicated to "Fräulein" (Miss) Rosine Handlirsch (1848-1938), a sister of Anton Handlirsch. She was an artist and poet, and one of the first feminists in 19th century Vienna. Rosine Handlirsch is probably also one of the first female plecopterologists, and Kempny had dedicated the species to her because she was its first collector.

ruffoi (*Protonemura ruffoi* Consiglio, 1961). Sandro Ruffo (1915-2010) was a zoologist and zoogeographer, in 1945 he became curator, in 1964 director of the Natural History Museum of Verona. He published more than 300 papers chiefly on Amphipods, of which he was a world specialist, and also on Coleoptera Chrysomelidae. It was co-editor of the Checklist and Distribution of the Italian Fauna too.

sabina (*Nemoura sabina* Fochetti & Vinçon, 2009). Refers to the Latin name of the Region where it was collected in Latium.

saccai (*Isoperla saccai* (Festa, 1939)). Dedicated to Giuseppe Saccà (1916-2008) who first collected a couple of specimens of this species. Saccà, was a doctor of medicine, but his love of entomology led him professionally to work in applied entomology, focusing his scientific activity on disease vectors and their control, publishing 106 original papers dealing with Leishmania vectors, *Anopheles* mosquitoes and food pests.

salfii (*Protonemura salfii* Aubert, 1954). Dedicated to Mario Salfi (1900-1970), an Italian zoologist and entomologist. In 1948 he became professor of zoology at the University of Naples. His studies concerned mainly the taxonomy, biogeography and ecology of Orthoptera as well as Tunicata Ascidiacea.

schilleri (*Capnopsis schilleri* (Rostock, 1892)). The

author dedicated this species to his friend Karl Schiller (1840-1910) who collected the first six adult specimens near Dresden in Germany.
schmidi (*Leuctra schmidi* Aubert, 1946). Species dedicated to the Swiss entomologist Fernand Schmid (1924-1998) who collected the first specimens of this species.
schoenemundi (*Taeniopteryx schoenemundi* (Mertens, 1923)). This species is dedicated to Eduard Schoenemund (1886-1943), an important German freshwater entomologist, who published 87 works, mainly on Mayflies, and 17 on Stoneflies.
sesvenna (*Leuctra sesvenna* Aubert, 1953). The specimens of the type series were collected in the Sesvenna Valley in Engadine (Rhaetian Alps, Switzerland).
seticornis (*Brachyptera seticornis* (Klapálek, 1902)). Name given in contradistinction to Pictet's *Brachyptera monilicornis*. The segments of the antennae of this new species do not have a bead-like aspect, like pearls in a necklace as we find it in *B. monilicornis*, but are more like bristles, as the original description says (p. 168). From Latin *seta* "hair, bristle" and *cornum* "antenna".
sicula (*Protonemura sicula* Consiglio, 1961). The name is derived from the latinized adjective for "Sicily" from where this species is endemic.
silana (*Leuctra silana* Aubert, 1953). The name derives from the Sila plateau in Calabria, where the species was found.
sinuata (*Nemoura sinuata* Ris, 1902). From the Latin *sinuatus* "bent". In lateral view the epiproct sclerite appears sinuate.
standfussi (*Amphinemura standfussi* Ris, 1902). This species was dedicated to Maximilian Rudolph Standfuss (1854-1917) a German-Swiss entomologist specialized in Lepidoptera.
stankovitchi (*Taeniopteryx stankovitchi* Ikonomov, 1978). Dedicated in memoriam of Professor Sinicha Stankovitch (1892-1974) who was an esteemed researcher of Limnology in Serbia.
subalpina (*Leuctra subalpina* Vinçon, Ravizza & Aubert, 1995). The species name comes from Latin *sub* "under, beneath" and *alpina*, as this species generally occurs in the Alps at lower altitudes than the closely related *L. alpina* and inhabits mountainous regions at the foothills of the Alps (Jura, Northern Apennines).
sulcicollis (*Amphinemura sulcicollis* (Stephens, 1836)). From Latin *sulcus* "furrow, wrinkle" and *collum* "neck", supposed to be distinguished by a furrow on the pronotum.
susemicheli (*Chloroperla susemicheli* Zwick, 1967). Species dedicated to Georg Susemichel (1926-2007), first collector of the species. He assisted students of aquatic insects far beyond his obligations as a member of the technical staff of the Schlitz institute.
teriolensis (*Leuctra teriolensis* Kempny, 1900). This species was described from specimens collected in Tyrol/Tirolo in the Atesine Alps. The adjective *teriolensis* is a modern derivation from the place name of Tyrol.
triangularis (*Amphinemura triangularis* Ris, 1902). From Latin *triangularis* "triangular", an allusion to the shape of the epiproct, in dorsal view.
trifasciata (*Brachyptera trifasciata* (Pictet, 1832)). From the prefix *tri-* "three, thrice" and *fasciatus* "banded". The forewings of the females have three transverse pigmented stripes, while the male is short winged.
tripunctata (*Chloroperla tripunctata* (Scopoli, 1763)). From the prefix *tri-* "three, thrice" and *punctatus* "with dots". A reference to the three black ocelli on the pale head.
tyrrhena (*Protonemura tyrrhena* Festa, 1938). Named after a land area around the Tyrrhenian Sea (Corsica, Sardinia, and Italy's west coast). This species was described from specimens collected in localities belonging to the Tuscan Archipelagos.
uncinata (*Nemoura uncinata* Despax, 1934). From the Latin adjective *uncinatus* "possessing a hook" derived from *uncinus* "hook, barb", a reference to the hooked male cercus.
undulata (*Nemoura undulata* Ris, 1902). From Latin *undulatus* "wavy, undulated". The veins at the apex of the wings are sinuous (Aubert 1950b).
vesulensis (*Leuctra vesulensis* Ravizza & Ravizza Dematteis, 1984). After the Latin name *Mons Vesulus* = Viso Mount.
vidua (*Capnia vidua vidua* Klapálek, 1904). From Latin *vidua* "widow"; no males were initially collected.
vinconi (*Leuctra vinconi* Ravizza & Ravizza Dematteis, 1993). Species dedicated to the French entomologist Gilles Vinçon, a keen student of Stoneflies, who collected the first specimens of this *Leuctra*, and recognized that it was a new species.
zavattarii (*Tyrrhenoleuctra zavattarii* (Consiglio, 1956)). Species dedicated to Edoardo Zavattari (1883-

1972), who was a biologist, explorer, entomologist and zoogeographer. For many years he was professor of zoology and director of the Istituto di zoologia dell'Università di Roma,

zwicki (*Leuctra zwicki* Ravizza & Vinçon, 1991; *Isoperla zwicki* Tierno de Figueroa & Fochetti, 2001). Peter Zwick, born in 1941 at Berlin is a qualified entomologist who studies mainly Plecoptera. He was for more than 20 years editor of *Aquatic Insects* and director of the Limnologische Flussstation of Schlitz. He published the important textbook of the Plecoptera phylogenetic system and catalogue, and established the genera *Siphonoperla* and *Xanthoperla*.

Discussion

According to the origin of their name, the Italian species can be subdivided into 7 groups.

Names pointing to a morphological feature (56 species).

Most of these names appear to be derived from Latin, only a few ones from ancient Greek

abdominalis, albida, apicalis, armata, bipartita, bipunctata, brevipennis, brevistyla, carbonaria, cephalotes, cingulata, flexuosa, fulviceps, fusca, geniculata, grammatica, grandis, hamulata, hexacantha, hippopus, inermis, intricata, intricatus, lateralis, leptogaster, lugens, macrura, major, marginata (2), *megacephala, microcephalus, minima, monilicornis, nebulosa, neglecta, nemuroides, nigra, nimborella, nimborum, nitida, nubeculum, obscura, obtusa, oxylepis, palliventris, pseudorosinae, pusilla, seticornis, sinuata, sulcicollis, triangularis, trifasciata, tripunctata, uncinata, undulata.*

Names dedicated to the first collector or to a well-known entomologist or biologist (53 species).

Twenty-three species out of fifty-one, concerning species endemic to Italy, were dedicated to Italian scholars. Almost all the remaining ones were named either to European plecopterologists or entomologists, except for the one dedicated to a Canadian plecopterologist.

andreinii, auberti (3), *aubertorum, braueri, budtzi, caprai* (2), *concii, consiglioi, costai* (2), *delmastroi, ferreri, festai, fochettii, gardinii, gattolliati, grafi, handlirschi, harperi, hrabei, illiesi* (2), *kühtreiberi, lagrecai, meyeri, mortoni* (2), *moselyi, muranyii, pasquinii, pesarinii, pictetii, rauscheri, ravizzai, ravizzarum, risi, rosinae, ruffoi, saccai, salfii, schilleri, schmidi, schoenemundi, standfussi, stankovitchi, susemicheli, vinconi, zavattarii, zwicki* (2).

Names pointing to a geographical or ethnological aspect (45 species).

algovia, alpina (2), *alpinum, apenninicola, ausonia, austriaca, biellensis, boreoni, calabrica, canavensis, corsicana, cyrnea, helvetica, hesperiae, hirpina, hyblaea, ichnusae, illyrica, ilvana, incudensis, insubrica, insularis, italica* (2), *jahorinensis, julia, kir, ligurica, lucana, meridionalis, oenotriae, orobica, oropensis, orsiera, padana, queyrassiana, sabina, sesvenna, sicula, silana, subalpina, teriolensis, tyrrhena, vesulensis.*

Names pointing to an ecological characteristic (9 species):

autumnalis, fontium, montana, niveola, petricola, praecox, prima, rivorum, rivulorum.

Names dedicated to a family member (5 species):

ameliae, annae, elisabethae (2), *helenae.*

Symbolic names (6 species):

bucolica, dolasilla, fraterna, juliettae, selene, vidua.

Names dedicated to an artist or scientist (3 species):

archimedis, dylani, mercuryi.

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BOLL. SOC. ENTOMOL. ITAL., 152 (3): 133-138, ISSN 0373-3491 31 DICEMBRE 2020

Gianni ALLEGRO* - Pier Mauro GIACHINO**

Notes on carabid beetles from the Oriental and Neotropical regions. First record of *Trechodes laophilus* Deuve, 2002 from Thailand (Coleoptera Carabidae Trechinae) and a synonymic note on the genus *Trirammatus* (Coleoptera Carabidae Pterostichinae)

Riassunto: *Note sui carabidi delle regioni Orientale e Neotropicale. Prima segnalazione di* Trechodes laophilus *Deuve, 2002 in Tailandia (Coleoptera Carabidae Trechinae) con nota sinonimica sul genere* Trirammatus *(Coleoptera Carabidae Pterostichinae).*

Trechodes laophilus Deuve, 2002 viene segnalato per la prima volta in Tailandia (provincia di Chiang Mai, Mae Lai River). Questa specie appare strettamente affine a *T. leclerci* Deuve, 1987 e a *T. satoi* Uéno, 1991, entrambi già noti della Tailandia. Viene fornita una chiave di identificazione, basata anche sulla morfologia dell'edeago, di tutte specie di *Trechodes* note della Regione Orientale, oltre che una mappa di distribuzione delle specie presenti in Tailandia.

Inoltre, viene stabilita la nuova sinonimia *Blennidus magellanicus* Allegro & Giachino, 2017 = *Trirammatus unistriatus nocticolor* Straneo, 1955 **n. syn.**

Abstract: *Trechodes laophilus* Deuve, 2002 is firstly recorded from Thailand (Chiang Mai province, Mae Lai River). This species is probably closely related to *T. leclerci* Deuve, 1987 and *T. satoi* Uéno, 1991, both from Thailand too. An identification key including the morphology of the aedeagus, to all *Trechodes* species recorded from the Oriental Region, as well as a distribution map of the species known so far from Thailand, are provided.

Moreover, the following new synonymy is proposed: *Blennidus magellanicus* Allegro & Giachino, 2017 = *Trirammatus unistriatus nocticolor* Straneo, 1955 **syn. n**.

Key words: distribution, taxonomy, Oriental Region, Chile, Trechodini, Pterostichinae, new synonymy.

INTRODUCTION

Trechodes species are of sporadic occurrence, rare in collections and generally only recorded from a few specimens, most of them attracted by light. Until now, only two species of *Trechodes* were known from Thailand: *T. leclerci* Deuve, 1987, described from Phang Nga province in the SW of the country (Deuve, 1987) and later recorded by Uéno (1989) also from Mt. Doi Suthep, Chiang Mai province, NW Thailand, as well as *T. satoi* Uéno, 1991, described from Mae Suya, Mae Hong Son province, NW Thailand.

Among the abundant materials generously offered to us by our friend and colleague Walter Rossi, an esteemed mycologist and specialist of Laboulbeniales, we had the opportunity to find three specimens of *Trechodes* Blackburn, 1901 from Thailand (Chiang Mai province, Mae Lai River) which belong to *Trechodes laophilus* Deuve, 2002, described from Laos and only recorded from this country. Due to the rarity of these records, an updated distribution map of the three species from Thailand is provided, as well as an identification key including the morphological features of the aedeagus, to all *Trechodes* species recorded from the Oriental Region.

Finally, the taxonomic position of *Blennidus magellanicus* Allegro & Giachino, 2017, a species recently described from Chilean Patagonia, was re-examined and a new synonymy is proposed.

MATERIALS AND METHODS

Morphological analysis was carried out through the examination of habitus by a stereomicroscope Wild M3 and male genitalia, included in Canada Balsam, by a biological microscope Leitz Dialux.

The images of habitus and male genitalia were made by a Leica DFC295 camera mounted on a Leica M205 C Stereomicroscope, using the software Leica Application System V4.0.

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The material studied is deposited in the following Museums and private collections:
CAl: Gianni Allegro Collection, Moncalvo (Asti), Italy
CGi: Pier Mauro Giachino Collection, San Martino Canavese (Torino), Italy
MCSNM: Museo Civico di Storia Naturale (Straneo Collection), Milano, Italy
MRSNT: Museo Regionale di Scienze Naturali (Mateu Collection), Torino, Italy

***Trechodes laophilus* Deuve, 2002**

Material examined: 2 ♂♂, 1 ♀ Thailand, Chiang Mai, Mae Lai River, km 27 road 118, 18°54'59"N - 99°14'09"E, 470 m a.s.l., unspecified local collector (CAl, CGi).

T. laophilus is similar to *T. leclerci*, *T. satoi* and *T. bakeri* by the general shape and color of the body (elytra with dark median band and pale apical antennomeres) (Fig. 1). The aedeagus, however, makes possible an easy identification of these species as it varies both in shape and in the structure of endophallus. *T. laophilus* differs from *T. leclerci*, *T. bakeri* and *T. satoi* in the shape of the apex of the median lobe of the aedeagus which is, in lateral view, more markedly hooked upwards (Fig. 2a). It also differs in the morphology of endophallus, which is armed with two robust median tooth-like pieces (Fig. 2b) (only one in *leclerci*, three both in *satoi* and *bakeri*, but differently conformed).

According to Uéno (1990), *T. cauliops* forms a separate species group, as well as *T. bakeri*, while *T. satoi* and *T. leclerci* seem to be close relatives. Successively, Deuve considered *T. palawanensis* as a strict relative of *T. bakeri* (Deuve, 2001), and *T. laophilus* as related to *T. satoi* and *T. leclerci* (Deuve, 2002).

The distribution map of the three species from Thailand, including the record of *T. laophilus* from Laos, is illustrated in Fig. 3. It has to be noted that the record of *T. leclerci* in north-western Thailand is based on a single female specimen (Uéno, 1989), and at that time neither *T. satoi* nor *T. laophilus*, which are very similar to *T. leclerci* in external morphology, were described. For this reason it is possible that this record refers to *T. satoi* or *T. laophilus*.

The characters used in the following identification key are taken from the original descriptions of the species (Bates, 1892; Deuve, 1987, 2001, 2002; Jeannel, 1926; Uéno, 1991). For *T. cauliops* and *T. bakeri*, the re-descriptions and the illustrations respectively by Andrewes (1935) and Uéno (1988) were checked too.

Fig. 1. Habitus of *Trechodes laophilus* from Thailand.

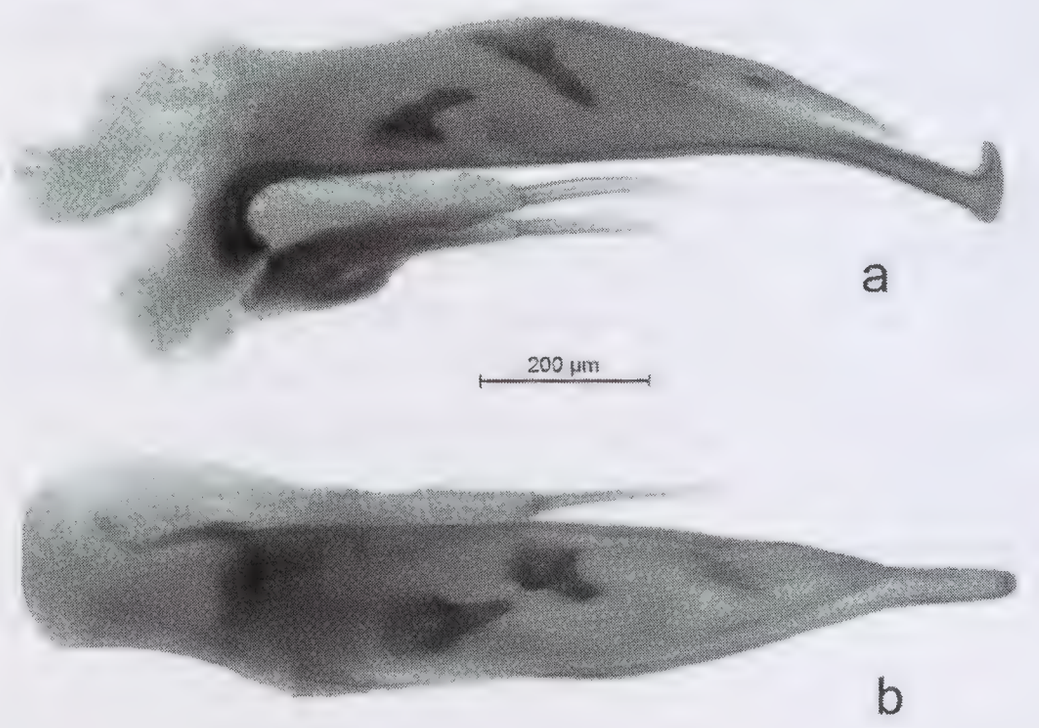

Fig. 2. Median lobe of aedeagus in left lateral (a) and dorsal view (b) of *Trechodes laophilus* from Thailand.

Key to the *Trechodes* species from the Oriental Region

1. Antennae and elytra concolorous brown, at most reddish towards apex.....2
- Elytra reddish-brown with a distinct dark transverse band at middle, more or less extended along suture; antennomeres 7-11 pale (Fig. 1).....3

2. Basal peduncle of pronotum (from hind angles to base) short (about 1/7 of total length of pronotum). Species from Myanmar (Burma) ....***Trechodes cauliops*** (Bates, 1892)
- Basal peduncle of pronotum longer (about 1/4 of total length). Species from Philippines (Palawan) ....***Trechodes palawanensis*** Deuve, 2001

3. Smaller in size (overall length = 2.80-3.00 mm)...4
- Larger in size (overall length = 3.30-3.50 mm).....5

4. Apex of the median lobe of aedeagus longer and slenderer, with three median tooth-like pieces in endophallus. Thailand.....***Trechodes satoi*** Uéno, 1991
- Apex of the median lobe of aedeagus shorter, with a single median tooth-like piece in endophallus. Thailand .....***Trechodes leclerci*** Deuve, 1987

5. Terminal spurs of male metatibiae remarkably compressed, the internal one distinctly unguiform at apex. Three median elongate sclerites in endophallus. Species from the Philippines (Luzon) ....***Trechodes bakeri*** Jeannel, 1926
- Terminal spurs of male metatibiae not evidently compressed, linear at apex. Two median tooth-like pieces in endophallus (Fig. 2b). Species from Laos and Thailand.....***Trechodes laophilus*** Deuve, 2002

Fig. 3. Distribution map of *Trechodes laophilus*, *T. leclerci* and *T. satoi*.

***Blennidus magellanicus* Allegro & Giachino, 2017**

Following a recent discussion with Kipling Will and Pierre Moret (2020, *in litteris*) concerning the morphological characters useful to distinguish the genus *Trirammatus* Chaudoir,1838 from *Blennidus* Motschulsky 1865, the taxonomic position of *Blennidus magellanicus* Allegro & Giachino, 2017 was re-examined.

At a deeper examination, we realized that this taxon should actually be assigned to *Trirammatus* due to the presence of two setae at base of tarsal claws (Will, 2005) and, moreover, that it was already described as *Trirammatus unistriatus nocticolor* by Straneo (1955). The check of the type specimens deposited in the Straneo collection at MCSNM (Fig. 4) confirmed this hypothesis. The subspecies *nocticolor* of *T. unistriatus* is only found in the extreme South of Chile (Magallanes), whilst the nominal subspecies is distributed in central-southern Chile (Araucania, Los Lagos) and Argentina. When describing it, we wrongly assigned it to *Blennidus* as these genera are morphologically very similar and in need of a revision of their taxonomic status (Will, 2020 *in litteris*); moreover, we were unable to correctly observe, by optical microscope, the diagnostic character of setae at the claw base and we were also misled by the label '*Blennidus* n. sp.' (by Mateu's hand) attached to the specimens referring to this taxon in Mateu Collection (MRSNT), which confirms the difficulties in distinguishing the genus *Blennidus* from *Trirammatus*.

As the identity of *Blennidus magellanicus* with *Tri-*

Fig. 4. Habitus and labels of *Trirammatus unistriatus nocticolor* Straneo, 1955, Holotypus.

rammatus unistriatus nocticolor was assessed, the following new synonymy is proposed:
Blennidus magellanicus Allegro & Giachino, 2017 = *Trirammatus unistriatus nocticolor* Straneo, 1955 **syn. n.**

CONCLUSIONS

As *Trechodes* species are macropterous and probably good fliers, sometimes attracted by light, their actual distribution in the Oriental Region could be wider than as thought in the past, as the recent new record of *T. laophilus* in Western Thailand demonstrates. This topic could be better investigated in the future by surveys based on light trapping, although the sporadic sampling of *Trechodes* specimens makes this research certainly difficult.

Finally, the re-examination of a South American species recently described led us to establish the new synonymy of *Blennidus magellanicus* Allegro & Giachino, 2017 with *Trirammatus unistriatus nocticolor* Straneo, 1955. Studies also based on a molecular approach are currently carried out (Will, 2020 *in litteris*) in order to shed light on the taxonomic status of these genera.

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622 - *Cerambyx cerdo* Linnaeus, 1758 (Coleoptera, Cerambycidae)

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REPERTI. Toscana: isola di Montecristo, 400 m a N di Punta dei Lecci (Portoferraio, Livorno), 360 s.l.m., UTM WGS84 32T60784687, 17.IX.2019, 1 ♂ e 1 elitra S. Piazzini leg. e det. (coll. S. Piazzini, Casole d'Elsa, SI).

OSSERVAZIONI. Specie a corotipo turano-europeo-mediterraneo nota in Italia in tutta la penisola e nelle isole maggiori ma con popolazioni assai frammentate (Sama, 2007; Stoch & Genovesi, 2016). In Toscana è distribuita in tutte le province ad eccezione di quella di Massa-Carrara (Sforzi, 2001; Terzani *et al.*, 2011). Si tratta di una specie xilofaga legata esclusivamente a querceti (cerrete, sugherete, leccete, ecc.) vetusti o con presenza di piante morte o deperienti, che si sviluppa su tronchi o grossi rami di piante senescenti. In tutto l'areale è in progressiva rarefazione per la scomparsa dell'habitat causata della semplificazione della struttura dei boschi dovuta al taglio e alla rimozione delle piante secche o deperienti (Albert *et al.*, 2012) e per le persecuzioni dirette, perché considerato dannoso per i querceti (Campanaro *et al.*, 2011). Per queste ragioni è considerato "Vulnerable" a livello globale (IUCN, 2019) ed è inserito negli allegati II e IV della Direttiva 92/43/CEE e nell'allegato A della L.R. Toscana 56/2000. *Cerambyx cerdo* è da ritenersi a rischio nell'isola di Montecristo, nonostante il territorio sia rigorosamente protetto da una Riserva Integrale, visto che la popolazione di leccio (*Quercus ilex*) alla quale risulta infeudata ammonta a soli 208 esemplari (Crudele *et al.*, 2005), in buona parte ultracentenari e senescenti, e che, a causa del sovrapascolo operato dai molti esemplari di capra selvatica (*Capra hircus*), la rinnovazione è sporadica e limitata ad alcune recinzioni realizzate nell'area di Collo dei Lecci nell'ambito del progetto LIFE NAT/IT/000353 "Montecristo 2010".

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623 - ***Apterola kuenckeli kuenckeli*** Mulsant & Rey, 1866 (Heteroptera Lygaeidae)

PERICART J., 1999 - Hémiptères Lygaeidae euro-méditerranéens vol.1 - Faune de France et régiones limitrophes 84A: 139 -141. Fédération Fracaise de Sociétés de Sciences Naturelles, Paris.
Prima segnalazione per la Puglia e nuova località per l'Abruzzo di specie mediterranea a diffusione localizzata, nota per alcune regioni meridionali e centrali, nonché per varie aree insulari italiane.

REPERTI. Puglia: prov. Foggia, Chieuti, località Marina di Chieuti, m 3 s.l.m., su muro presso massicciata ferroviaria, 28.VI.2017, N. Olivieri leg., 2 ♂♂ 2 ♀♀ (det. et coll. Olivieri).
Abruzzo: prov. Chieti, Ortona, m 4 s.l.m., su muro presso massicciata ferroviaria, 13.VIII.2016, N. Olivieri leg., 2 ♂♂ 3 ♀♀♀; (det. et coll. Olivieri).

OSSERVAZIONI. Specie a geonemia mediterranea, suddivisa in quattro sottospecie di cui *A. kuenckeli kuenckeli* è diffusa in Spagna meridionale e orientale, Francia meridionale, Corsica, Italia meridionale, Sicilia, Sardegna, Malta, Grecia continentale, Repubblica di Macedonia, Bulgaria, Marocco, Algeria settentrionale, Tunisia e Libia nordorientale, *A. kuenckeli rubicunda* (Stål, 1872) è presente a Cipro, in Turchia meridionale e centrale, Siria, Libano, Israele, Giordania e Iran, *A. kuenckeli obscura* Deckert 1995 è nota dell'Andalusia e del Marocco occidentale e *A. kuenckeli focarilei* Tamanini 1964 è esclusiva di Pantelleria (Pericart, 1999). La specie è stata rinvenuta in Italia in Abruzzo (Luigioni, 1929; Tamanini, 1964, 1973), Lazio (Natura Mediterraneo, 2009) Campania (Pericart, 1999), Basilicata (Tamanini, 1981), Calabria (Tamanini, 1964, 1981) Sicilia (Walker, 1872; Costa, 1887; Oshanin, 1909; Stichel, 1938; Mancini, 1952, 1960; Wagner, 1958, Tamanini, 1964; Slater, 1964; Servadei, 1967), Sardegna (Costa, 1883; Ferrari, 1888; Singer & Mancini, 1938; Servadei, 1952; Stichel, 1959; Mancini 1960; Tamanini, 1964; Slater, 1964), Isole Eolie (Tamanini, 1981), Lampedusa (Mancini, 1960) e Pantelleria (Tamanini, 1964). *Apterola kuenckeli kuenckeli* è una specie attera, legata alle zone particolarmente xerotermiche della regione mediterranea, dove vive sul suolo o sotto le pietre e localmente può essere numerosa. Nella località di rinvenimento nella Puglia settentrionale, a Chieuti, la specie compare con un elevato numero di esemplari su un basso muro in cemento prossimo alla massicciata ferroviaria, tale muro è fiancheggiato da un incolto arido occupato da vegetazione erbacea soggetta a disturbo antropico, sviluppatasi su pietrisco calcareo di riporto. Gli individui in orario pomeridiano tendono ad aggregarsi intorno a possibili fonti alimentari, rappresentate da residui vegetali e deiezioni di uccelli. In Abruzzo, ad Ortona, la specie è stata rinvenuta in alcuni individui, ugualmente su un basso muro in cemento, situato presso la massicciata ferroviaria, in una zona caratterizzata da prati aridi soggetti a disturbo antropico, posti a circa 100 m di distanza dal mare. In Abruzzo la specie era già stata segnalata da Luigioni (1929) a Pescasseroli (L'Aquila), presso il Rifugio della Difesa, a circa 1270 m s.l.m. di quota, con un esemplare trovato sotto una pietra; su tale ritrovamento si basano anche le citazioni di Tamanini (1964, 1973) per la regione. La nuova località di rinvenimento della specie in Abruzzo, che si trova a circa 107 km di distanza in linea d'aria dal luogo della prima osservazione, in una zona situata presso il mare Adriatico e soggetta a clima mediterraneo, amplia significativamente l'area di presenza della specie nella regione. Il ritrovamento di *Apterola kuenckeli kuenckeli* nelle due località costiere situate nella Puglia settentrionale e in Abruzzo, a circa 94 km di distanza tra loro, testimonia la diffusione della specie anche lungo il versante adriatico della penisola italiana.

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624 - ***Acanthocinus griseus*** (Fabricius, 1792) (Coleoptera Cerambycidae Lamiinae)

PORTA A., 1934. Fauna Coleopterorum Italica. Vol IV – Heteromera –Phytophaga. Stabilimento Tipografico Piacentino, Piacenza. pp. 220-221.
Prima segnalazione per la Sardegna di una specie già nota per l'Italia di Val d'Aosta, Piemonte, Lombardia, Trentino-Alto Adige, Liguria, Emilia-Romagna, Toscana, Umbria, Marche, Lazio, Abruzzo, Campania, Puglia, Calabria (Sama & Rapuzzi, 2011).

REPERTI. Sardegna, Lotzorai (prov. di Nuoro), pineta, m 7 s.l.m., 1 ♂, 11.VI.2018, F. Musio, C. Sciola leg., A.B. Biscaccianti, F. Fois det. (coll. AGRIS, Azienda San Michele, Ussana). L'esemplare è stato catturato mediante trappola di tipo cross-vane attivata con attrattivo commerciale per coleotteri xilofagi (Gallo Pro Pinowit, prodotto dalla ditta Witasek PflanzenSchutz GmbH) ed etanolo al 70%, nel corso di un monitoraggio di insetti xilofagi alieni.

OSSERVAZIONI. Specie a corotipo Euro-Asiatico, diffusa in gran parte dell'Europa, Asia Minore, Caucaso, Asia centrale e settentrionale fino al Giappone. In Italia *A. griseus* è relativamente localizzato ma in espansione negli ultimi decenni nelle pinete artificiali, verosimilmente favorito dagli incendi (Biscaccianti, 2004 e dati inediti). Si può reperire dal livello del mare alla montagna. La larva si sviluppa su *Pinus* spp. e secondariamente su *Picea* spp. (Sama, 1988).

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SAMA G., 1988 - Fauna d'Italia XXVI. Coleoptera Cerambycidae. Catalogo topografico e sinonimico. Calderini, Bologna, XXXVI + 216 pp.

SAMA G., RAPUZZI P., 2011 - Una nuova checklist dei Cerambycidae d'Italia (Insecta Coleoptera Cerambycidae). Quaderno di Studi e Notizie di Storia Naturale della Romagna, 32: 121-164.

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625 - *Monochamus galloprovincialis* (Olivier, 1795) (Coleoptera Cerambycidae)

WALLIN H., SCHROEDER M., KVAMME T., 2013 - A review of the European species of *Monochamus* Dejean, 1821 (Coleoptera, Cerambycidae) - with a description of the genitalia characters. Norwegian Journal of Entomology 60, 11-38.
Prima segnalazione per la Sardegna di una specie già nota per l'Italia di Val d'Aosta, Trentino Alto Adige, Veneto, Friuli Venezia Giulia, Piemonte, Lombardia, Liguria, Emilia Romagna, Toscana, Marche, Umbria, Lazio, Campania, Puglia, Basilicata e Sicilia.

REPERTI. Sardegna, prov. Cagliari, Sinnai, pineta, m 152 s.l.m., 1 ♀, 13.VII.2017, F. Musio & C. Sciola leg., F. Fois, F. Foddi & M. Nannini det. (coll. AGRIS, Azienda San Michele, Ussana). Sardegna, prov. Nuoro, Lotzorai, pineta, m -7 s.l.m., 1 ♀, 3.X.2018, F. Musio & C. Sciola leg., F. Fois, F. Foddi & M. Nannini det. (coll. AGRIS, Azienda San Michele, Ussana). Gli esemplari sono stati catturati nel corso di un monitoraggio di insetti xilofagi alieni eseguito mediante trappole di tipo cross-vane e multi-funnel, attivate con feromoni di aggregazione e sostanze ad azione cairomonale.

OSSERVAZIONI. Specie polimorfa ad ampia distribuzione europea e in parte asiatica (dalla penisola Iberica alla penisola Scandinava fino alla Russia Europea e all'Ucraina), rappresenta assieme a *M. saltuarius* (Gebler, 1830), *M. sartor* (Fabricius, 1787) e *M. sutor* (Linnaeus, 1758) una delle quattro specie di *Monochamus* segnalate per il territorio italiano. Nelle aree di distribuzione *M. galloprovincialis* è presente con due sottospecie: la ssp. *pistor* nota delle Alpi orientali e la ssp. nominale, rinvenuta nel litorale tirrenico dove ha raggiunto il crinale appenninico, scavalcandolo fino a popolare le pinete artificiali del crinale romagnolo, ricomparendo poi sul Promontorio del Gargano. La sua diffusione è poco chiara per quanto riguarda il versante adriatico, forse per una penetrazione avvenuta da più direttrici; in Venezia Giulia è presente con una forma intermedia tra le due sottospecie (Sama, 1988). *Monochamus galloprovincialis* riveste importanza fitopatologica non tanto per l'attività trofica che esplica nei confronti dei pini nei quali compie lo sviluppo, ma in quanto potenziale vettore del nematode *Bursaphelenchus xylophilus* (Steiner & Buhrer), noto come nematode del pino, specie fitopatogena da quarantena inserita nella lista A2 dell'EPPO, la cui presenza in Europa è già stata rilevata in Portogallo nel 1999 (Sousa *et al.*, 2001) e in Spagna nel 2008 (Robertson *et al.*, 2011; Abelleira *et al.*, 2013).

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